



SCHOOL OF PAINTING

for the imitation of
WOODS AND MARBLES

by

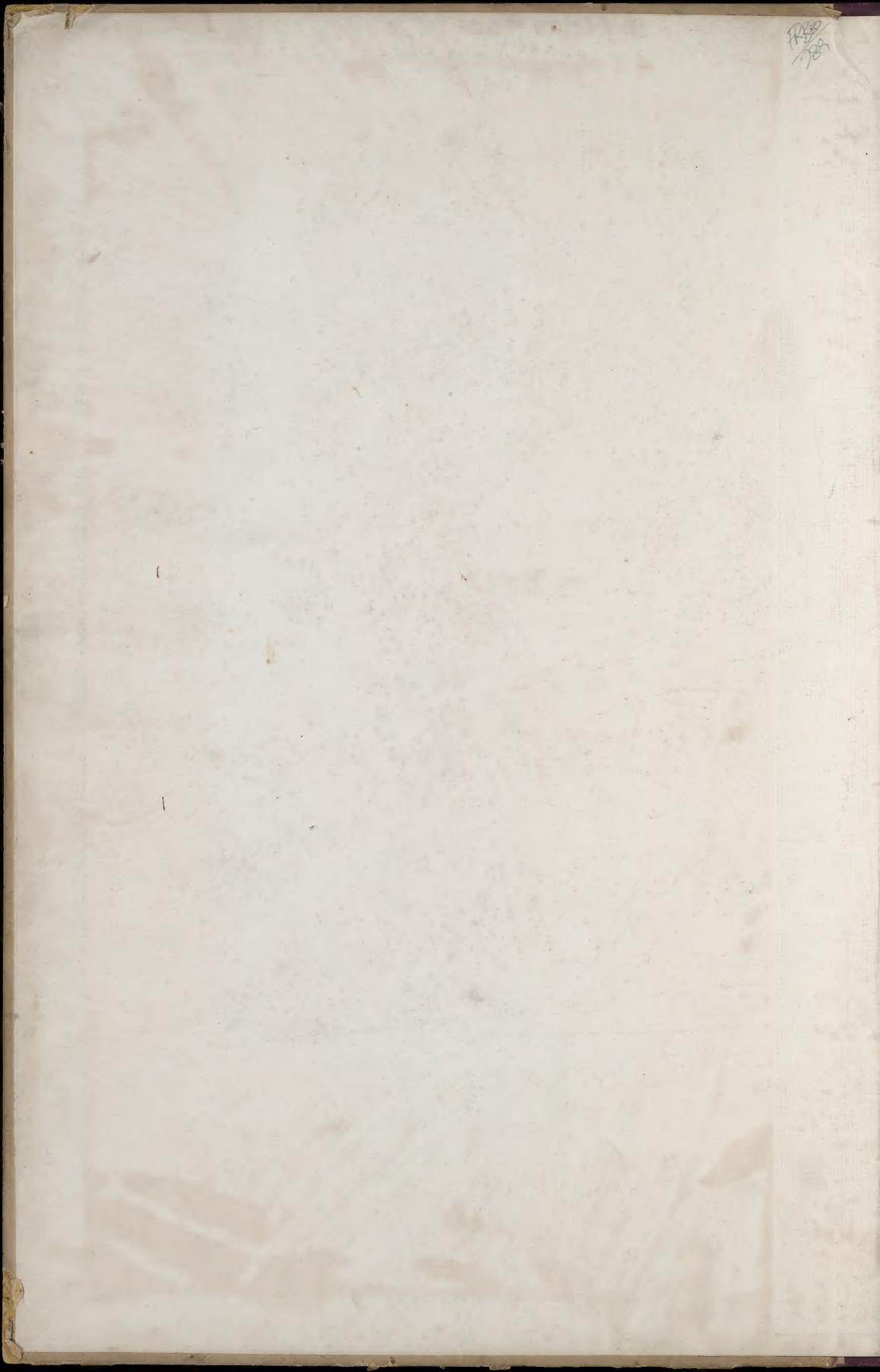
P. VAN DER BURG

ROTTERDAM.



LONDON
CROSBY LOCKWOOD & C^o

7 STATIONERS' HALL COURT LUDGATE HILL



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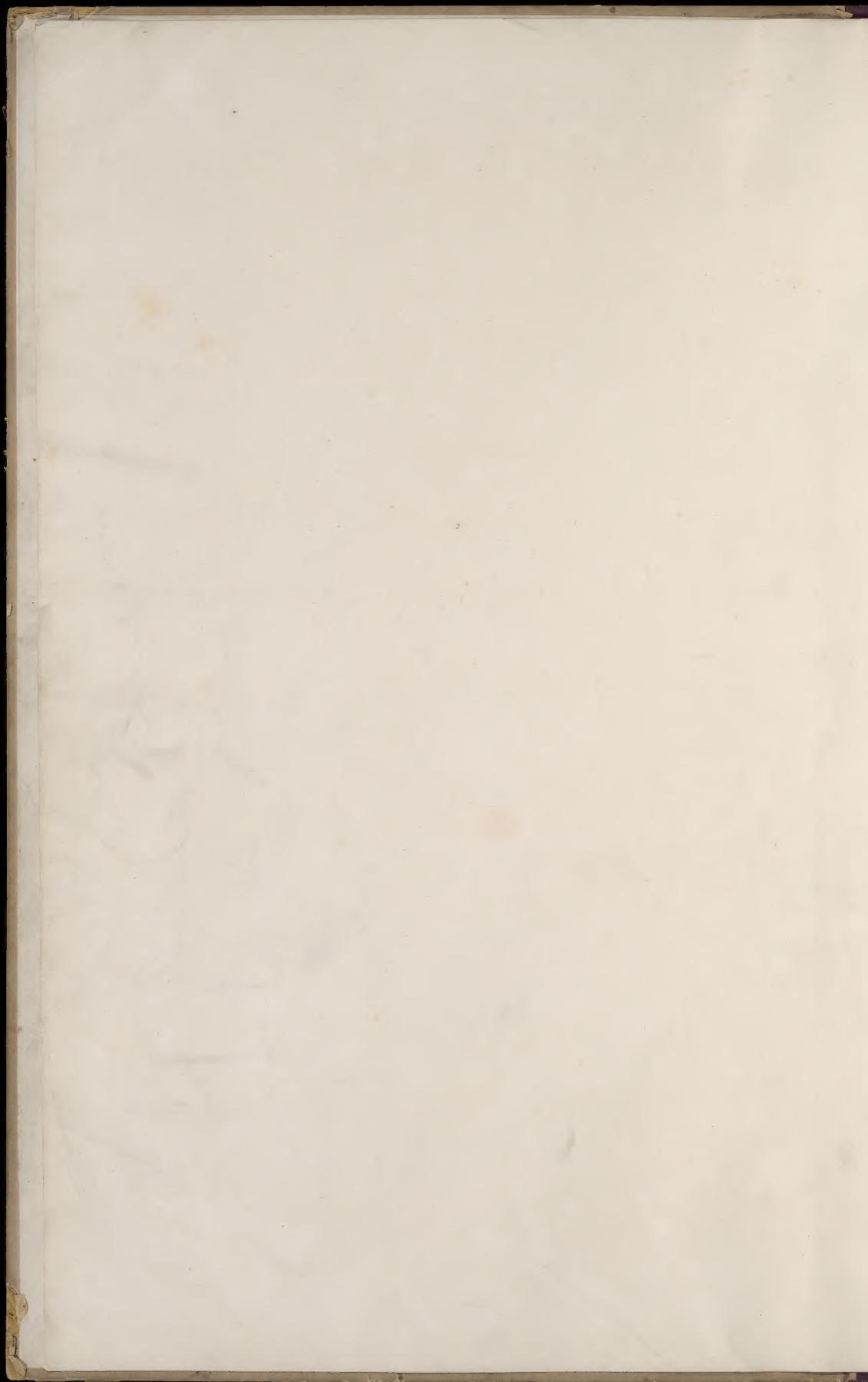
1st edn.

12 plain & 24 fine marbled plates.
1 plate has short margin

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SCHOOL OF PAINTING

FOR THE IMITATION OF

WOODS AND MARBLES

as taught and practised

BY

A. R. VAN DER BURG AND P. VAN DER BURG,

Directors of the Rotterdam Painting Institution.

2nd PRIZE LONDON 1870.—FORTSCHRITTS MEDAILLE VIENNA 1873.
FIRST PRIZE PHILADELPHIA 1876.

With numerous engravings and chromolithographs.



LONDON :
CROSBY LOCKWOOD AND CO.
7 STATIONERS' HALL COURT, LUDGATE HILL.

SCHOOL OF PAINTING

WOODS AND MARBLES

BY JAMES LEE.

WITH A HISTORY OF THE ARTISTS, AND A GLOSSARY OF TERMS.



BY JAMES LEE.
LONDON:
JOHN WILKINSON, 1800.
Price, 12s. 6d.

SCHOOL OF PAINTING

FOR THE

Imitation of Wood and Marble.

Experience teaches us that the opportunities of accurately studying Nature in its simple process of working are too often neglected, and that, even when it is made an object of contemplation, the gratification of our wants, so intimately connected with it, is lost sight of.

Although an accurate knowledge of the natural condition of things is not an absolute requisite for mastering our Method, yet it offers one of the most efficient means to make progress in it; and without any doubt, the greater or less proficiency to be attained in this branch depends upon the degree of clearness, with which we are able to represent to ourselves the objects we intend to imitate.

An independent knowledge founded upon experience and well established principles is the safest way to progress, whilst the still existing custom of working merely according to slavish imitation will gradually be superseded by the daily progressing development, and owing to the imperfection of its resources has but a lingering existence.

Nature is often pronounced to be unattainable, and though this may be true to a certain extent, yet, on the other hand, it cannot be denied that it must be our only guide.

But let us take another view of the matter. Let us fancy nature not as it really exists, but as if it were painted. We contemplate it then as accurately as possible and put the question, in which way the skilful hand of man has produced such a master-piece, how we have to set about it, how this work of art is to be begun and completed.

Should it be beyond the reach of man, by uninterrupted searching, by all-sided contemplation and by unremitting industry to come up to nature and very nearly to equal her? And even if human labour may, in many respects, remain behind the original offered by nature, yet by these efforts a degree of perfection will be attained, which by far surpasses our present attainments and expectations.

However, in order to acquire a knowledge of nature in its details and to gain a just insight in its being, a thorough instruction is of the highest importance; an instruction as simple as possible and able to stand the most severe proof, so that even at first sight it affords the requisite directions, as well to the more practised as to those entirely ignorant of the process.

It is the object of the present work to afford such a simple guide; it may be compared with Reality, i. e. with Nature itself, by every one who has an opportunity of doing so, and in our opinion the conviction will by this means be more and more established, that this method may to every one afford the means of attaining the object in view.

Many a time the question has been put to us by such as were altogether uninformed whether they might be enabled, according to our method, thoroughly to learn the art of imitating different sorts of Wood and Marble. Their own experience, we believe, has given them a satisfactory answer; the work, which they have produced, clearly shows that, by following our method, any one, combining good will with judicious industry, may obtain the results desired. Yea, it has been of frequent occurrence that young people, who from some cause or other were dissatisfied with their own profession, have found a permanent and reliable means of subsistence by attending a three-monthly Course at our Establishment.

Faithful to the promise of our Prospectus we shall here reproduce a complete Course of instruction; we shall simply and clearly explain the process of nature, and both by pictures and by explanations afford a solid basis, as well to the more practised one as to the uninformed, upon which they may thoroughly master this beautiful art.

EXPLANATION OF ENGRAVING I.

The tools are represented in half their real size.

No. 1. The badger-brush.

- , 2. The glazing-brush for the different species of wood; it is made of hog's hair in tin, longer and thicker than the common wood-brush or slitter (flat brush).
- , 3. The grain-drawer or veining-brush, to be used for sundry species of wood; it is somewhat thinner in hair than No. 2.
- , 4, 5, 6, 7 common flat wood-brushes or slitters (flat brushes).
- , 8. Wide-toothed or horse-comb. For the dimension and distance of the teeth, the picture need not be accurately followed.
- , 9. Strong and stiff brush.
- , 10. Otter's hair brush, soft-haired, in tin.
- , 11 en 12. Spunge and flat brush.

These tools, partly prepared for use will be further described and illustrated on Engraving 7 (Part 3).

If a difficulty might be found in procuring any of these tools or others, subsequently to be mentioned, we are prepared to forward them on application, made *prepaid*.

OBSERVATIONS ON THE DIFFERENT SPECIES OF WOOD IN GENERAL.

The various species of wood have, strictly taken, each their peculiar qualities; they differ in grain, pores and colour. If we take up a piece of wood well polished or glazed, and turn it round, so as to make the light fall upon it from different sides, we shall at once perceive that its colour takes different hues and the so-called shine changes its place, according to the light falling upon it, and we may equally convince ourselves that the grain remains unaltered whilst the parties of light and chief colours, though remaining the same, change their places.

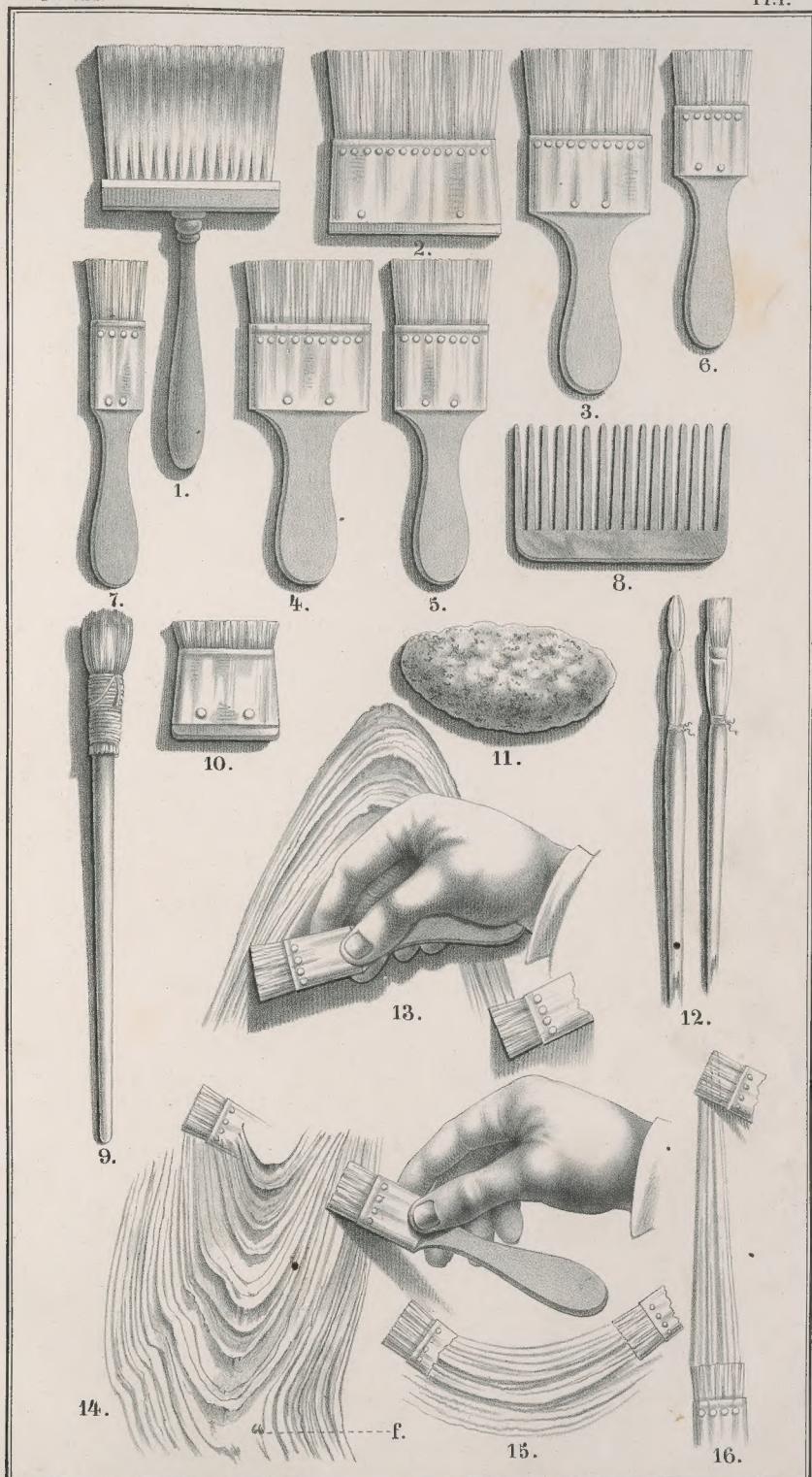
By means of this superficial contemplation, we find that the grain may be considered to be permanent; but that the colour, i. e. the leading colour of the wood, changes its place by the different direction of the light falling upon it. So, the grain is not dependent upon the colours of the various species of wood; but the colour changes its place according to the grain.

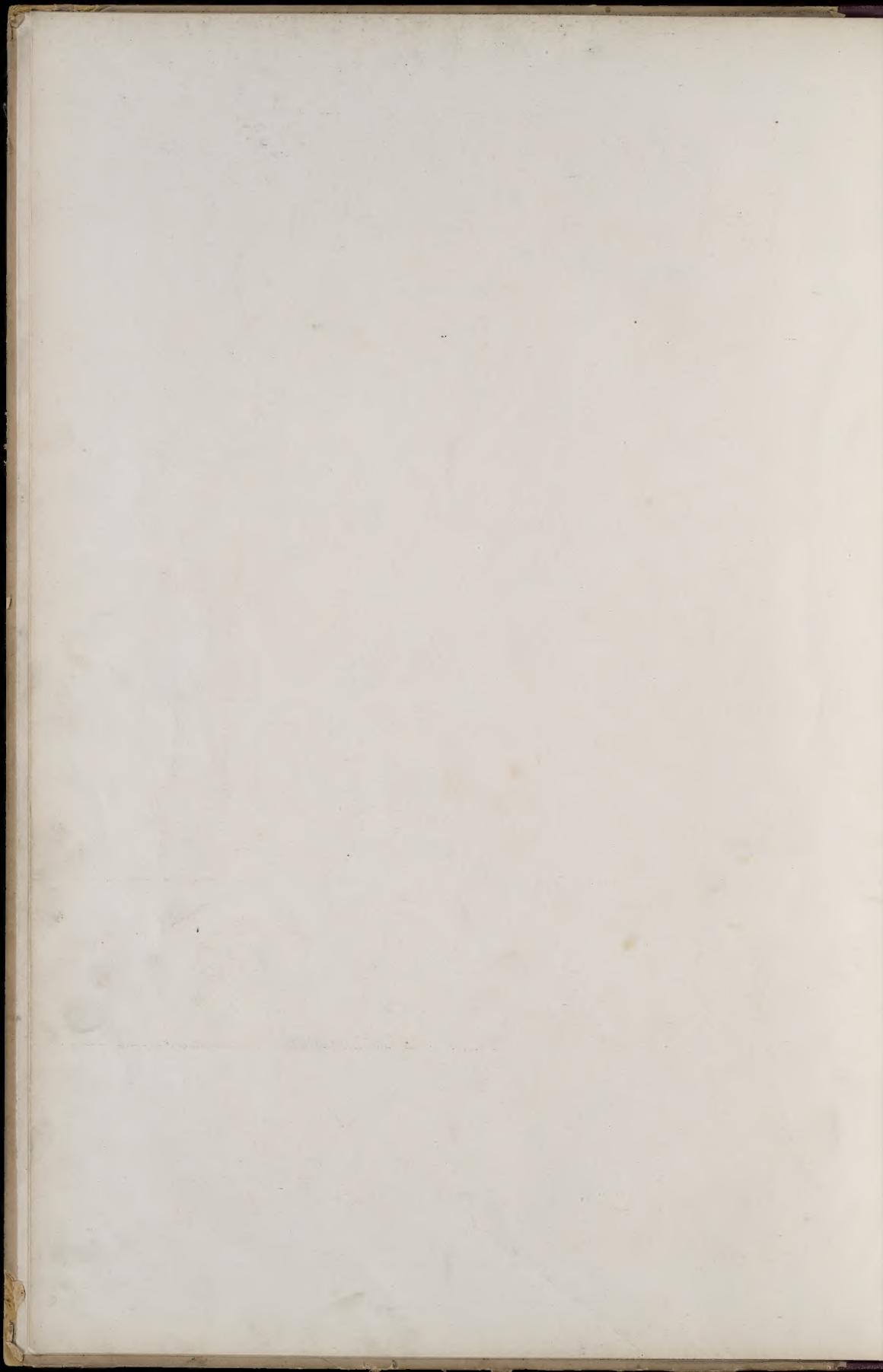
In the next Part, treating of the different species of wood, we shall by minute representations give the proof, which may be taken as a fixed rule, that from whatever side the light may fall on the wood, the hues will always change in fixed parts of the grain.

The grain as well as the pores by which, independent of the colour, the greater part of the different species of wood may be recognised, deserve our especial attention; for they constitute as well the basis for the wood that is to be painted as the means of rendering in the ground colour the character of the wood.

On getting better acquainted both with the wood itself and with its imitation, it will be found that in some species of wood the grain has a regular beginning and end; in others, however, it is coupled and combined; sometimes porous, fine, and distinct, then again soft, extending and broad. The grain is the regular or irregular rings formed every year in the wood, and so they are properly speaking the vital parts of the various species of wood.

In the 3rd Part we shall again refer to these matters, where they will be found illustrated by engravings.





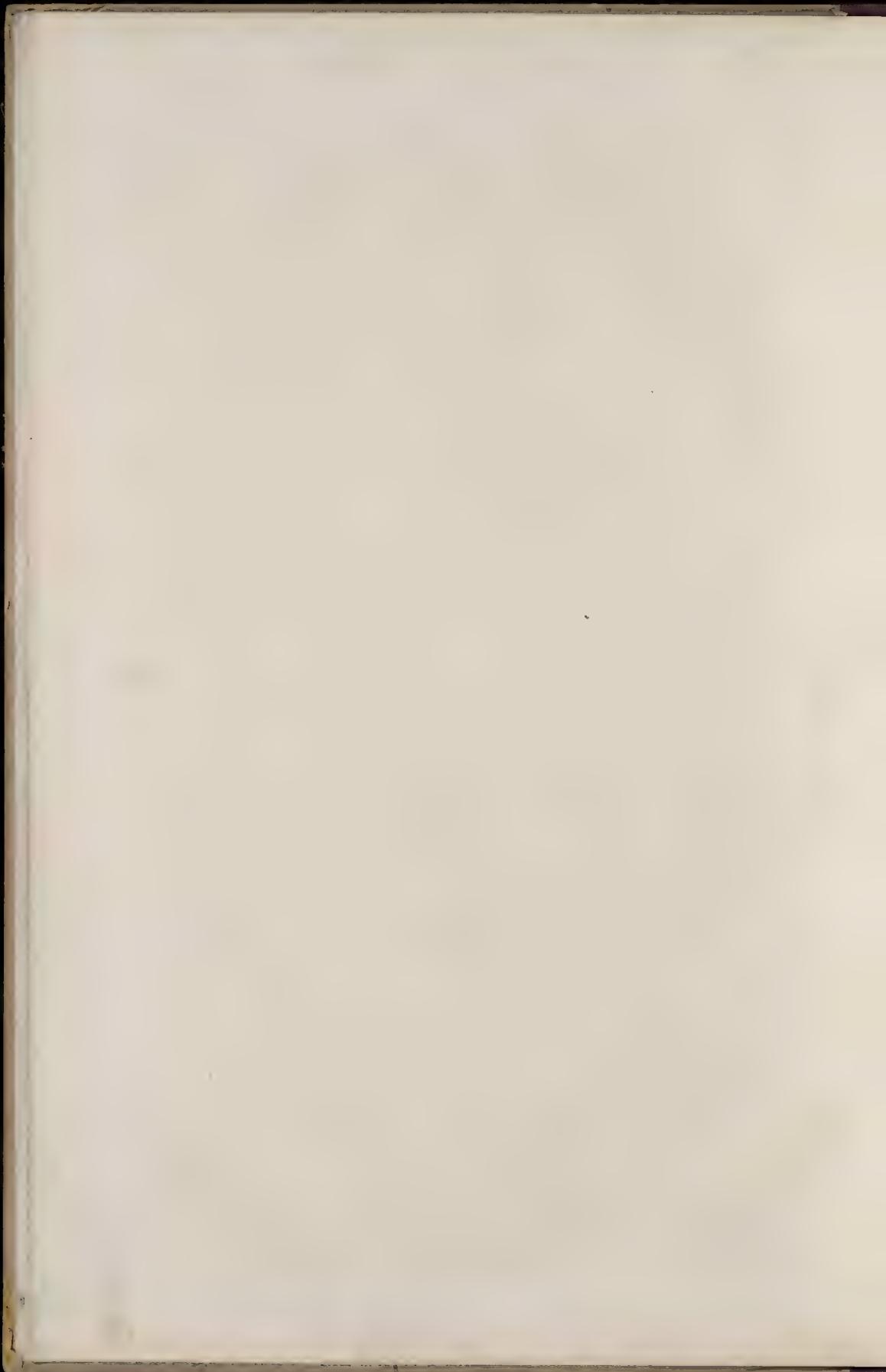
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PI 2



AMAZONIA - AMERICA

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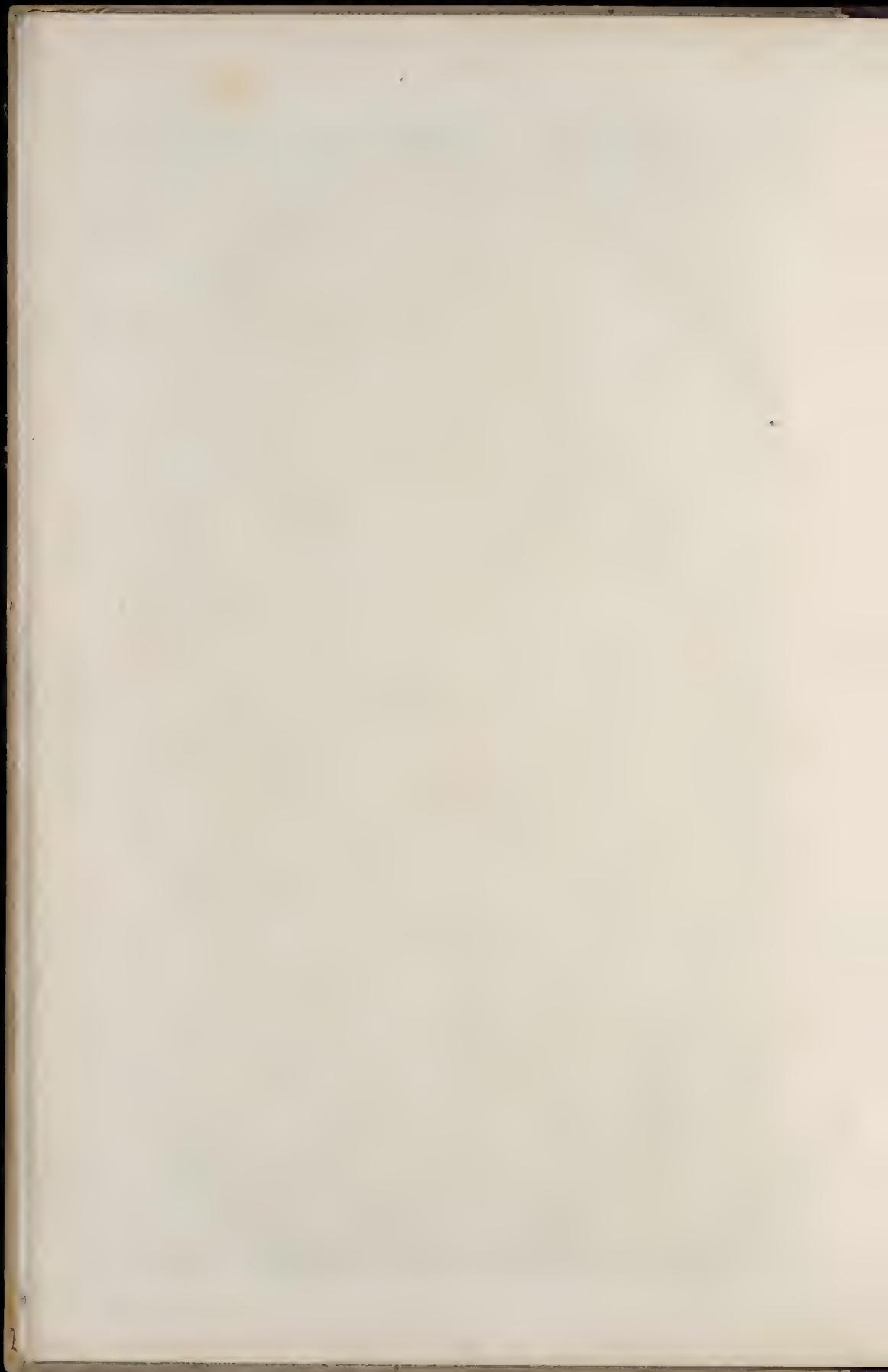
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WA L N U T.

ENGRAVINGS II AND III.

This Wood, which is indigenous in Asia, was brought by the Romans to Italy, whence it spread to Germany, France and the other countries of Europe. On account of its beautiful colour, it belongs to the most esteemed species of wood used by joiners and imitated by painters.

Walnut, being variegated in its appearance, belongs to those species of wood in which the rings show different forms and sizes, and where the regular annual ring often occurs in thick, black combined veins. Chiefly owing to the influences of time and light, walnut is liable to various changes, sometimes assuming a drab hue, at other times a greenish or brown-gray one; yet in the course of time it becomes more regularly dark.

For painting walnut, as it is represented in Engraving 2, the primitive colour is composed of white, yellow ochre and Turkey red. The Turkey red, known by this name, is common red; it is also known under the name of English or Prussian Red and possesses a bright hue.

When the under-mentioned paints are rubbed in water, as is done for most species of wood, the palette is filled with them in the following manner.

At the grasp of it a small oval cup is fastened, wide enough to dip in it the glazing-brush (Pict. 2); next to the cup are then put successively Black, Cassel Earth, burnt Sienna, Raw Sienna, and a little Prussian Blue. (The black is Ivory Black.)

Then the palette and the other tools are taken in the hand so that they can be easily held, viz. the wash-leather, graining-brush (Pict. 13 and 14), the stiff brush (Pict. 9), and the badger-brush; and further the comb (Pict. 8), which is placed with the back between the index and the palette, in such a manner as to protrude with the points or teeth from under the palette.

The graining and stiff brushes just mentioned are the brushes denoted by the figures, by which we shall for the future name them. In Part. 3, Engraving 7 minute representations will be given with the description of the manner in which they must be prepared to answer the purpose desired.

The sponge is moistened with water, the panel is made free from curdling by some unburnt and burnt Sienna, and a little Cassel Earth and a slight even hue is left on it, until the colour be obtained, represented in Engraving II. This tinct being dry, the grain is designed, which is composed of Black, Cassel Earth, and a little burnt Sienna. The before mentioned graining and stiff brushes are filled with a little water and with the said paints, then the graining brush is a few times slightly knocked against the comb, and a trial is made in the corner of the panel, whether the thickness required for the grain be obtained. If the grain is too broad, a little of the liquid is pressed from the brush on the wash-leather, and the grain will get slighter; if the grain be too slight a little more paint or moisture is put in the brush.

By this hint it becomes evident that the difference in the thickness of the grain to be painted depends entirely upon the quantity of paint, contained in the brush.

Especial care is to be taken that the brush be not overcharged with paint, and that the point or side of the brush, with which the principal vein or fibre is to be designed, be most filled with the darkest hue.

Then the brush is taken in the hand in such a position as is represented in Pict. 13 and 14, and, after a little practice, it will be found that this position is most conducive to a quick and free process of working.

Now be it tried, lightly and without pressing, to design the grain. In Pict. 13 it is shown that the ascending part is to be painted with the upside of the brush; and thus the principal vein as well as the thin spreading veins will be designed in one stroke.

The Pict. 13 and 14 show how this is to be managed: the brush is put down in a slanting position, is then moved upwards and again downwards in that position, but without changing the direction; in this manner the veins along the sides fall densely together and those at the top extend, just as it is seen in nature.

Pict. 15 shows that, if in graining, the brush is made to move in a circular direction the former continues to run parallel, which therefore is contrary to nature, for, as is well known, a tree increases more in length than in size.

Pict. 16 illustrates the fact that the enlarging of the veins by a rotatory motion of the brush may in many cases be of great importance for drawing the veins by the side of the leading parts. (Pict. 14, line *f*.)

Pict. 14 represents the downward motion, which is made with the lower-part of the brush, like the one above is performed with the upper-part; as it is shown in the pictures, the brush moves downwards in one and the same direction, to go up again in an unaltered position.

There is a very simple reason why this is always to be done: every grain, as has been before explained, has its beginning and end; only a few species of wood excepted. Whether this beginning go from bottom to top, or come down again in rounded curves, the grain remains uninterrupted, and one curve follows another regularly. When, now, the tree increases in length, the widely extending veins will become more compact on the sides, and it is by moving the brush unaltered in an up- and downward direction that this state of things is duly represented. It is, however, impossible to draw the continued grain, represented in Pict. 13 and 14, in one stroke; that is to say, at once to draw the ring oval-shaped; in such cases, therefore, either the upper or the lower ring is drawn first and the opposite ring is immediately attached to it; a process which is so easy that the point of juncture will not even be observed. In Engraving 2 which serves to give an instance of this process, the junction will be looked for in vain. One should always mind to touch up with the badger softener every portion when still wet, so that the top vein may get a dark edge. The knots are placed in the sundry portions by means of the stiff brush (No. 9), which, being filled with a little paint, is lightly put down in the required spots and turned round one stroke, by which the knot is formed. The central portion being in this way designed, the side veins are drawn; for this purpose the brush is taken in a horizontal direction; the veins next to the principal group are made wider distant and more to the outside proportionally finer and closer together. To paint the thick widely spread side veins next to the core, the brush must be pretty well filled, but for the successively finer side veins rather less; by knocking on the comb, this may be altered as is requisite. Besides, for the side veins notice should be taken of what has been said before of Pict. 16. When designing the different species of wood, it is expedient occasionally to knock the brush slightly on the comb, by which means a variety in the veins is obtained.

In Part 3 more minute representations and explanations will be given further to elucidate this point.

The grain being designed, the pores of the wood are to be made in it, for which purpose the brush, represented in Pict. 2 or 5, is to be used, which half dry is filled with Cassel earth, black and a little burnt Sienna mixed together.

The comb is taken in the left hand, the brush and badger softener in the right; then the comb is placed at about 25 Inch. from the panel, and quickly moving the extremity of the brush over the comb, the small speckles are obtained on the panel. If these latter are too large, the brush is too much charged; if they are too small, it is too dry; the charging of the brush is therefore to be regulated according to circumstances and the speckles must be immediately touched up by the badger softener in the form of the grain by which the pores desired are obtained.

Next the glazing or painting of the wood is proceeded to; in doing which several material points are to be observed. The paints are Cassel earth, burnt Sienna, black, Prussian blue, and for the sides and the light green and yellow tints also some raw Sienna. For this purpose, the brush, represented in Engr. 1, Pict. 2, is to be used. After being well saturated with water, the brush is filled with the said paints. If one desires the knotty portions, for instance, somewhat reddish brown, they are first designed, and then some Cassel earth, black, etc. are added, as is represented in the genuine wood in Engr. 3. Care should be taken that the paints are diluted on the palette with the glazing brush, so as to get the tint required; by which means, without passing the brush over too frequently, the tints may be made gently to flow together on the panel, whilst the paints do not flow away, but are diluted, so as to be able in temperate weather to paint and to finish a whole panel. In warm weather, e. g. in summer, the central portion is first painted and finished in parcels. The panel being painted in this manner, the paint is rinsed out of the brush and the superfluous water pressed out on the wash leather; then the leading tints and lights are added; for the small portions the little slitter (No. 7) is used in order to finish more minutely, after which the whole, while still wet, is gently rubbed over with the badger softener in an undulating motion, according to the form of the sundry portions.

In Part 3 more minute directions will be given for the matters concerning the glazing, as well as the re-glazing of the different species of wood; though this is exclusively done for very superior work. But before proceeding to this, some proficiency should be acquired by practice.

OBSERVATIONS

ON MARBLE IN GENERAL.

Marble, as soon as it became known, always occupied a conspicuous place in adorning palaces, public and private buildings. The number of different species, brought to light since the ancient times, is so amazingly large, that we dare not venture to enumerate them; we shall only mention those species which have been excavated in more recent times, and, being to the taste of the public, commonly occur. Although it is difficult to enumerate the different species of Marble, it is easy on the other hand, to arrange the species most in vogue under different names, by which the character or nature may be distinguished: they are known by the names of: speckled, spotted, veined, lumpy, etc.

The colour and species of marble are very seldom expressed by its name, which seems to have depended upon various circumstances; one species, namely, bears the name of the place where it was found, another that of its colour, many others are named after the proprietors of the quarries or after those, who discovered new quarries; a few are also known by the names of eminent persons or late princes.

Marble is a mineral of calcareous substance; it consists of various ingredients or materials, which had their origin from either land or sea, as: crustacea, corals, whelks, fish, plants, a detailed account of which would lead us beyond the limits, we have put to ourselves. We therefore think, it will be sufficient to state our opinion, which is shared by many, that marble, in the same way as coal and other minerals, owes its existence to the earthquakes and inundations which have visited and shaken our earth in diluvian and antediluvian periods. Through these powerful phenomena various substances were heaped up and mixed, formed into beds or layers and spread over the earth; which beds, petrified in the course of centuries, became hard solid bodies. These beds are very unequally divided over the globe; they varied according to the nature and qualities of the land and became in one place coal-mines, in another marble-quarries, in a third chalkcliffs, etc. How many centuries have been required for the formation of those beds is difficult to determine, but it is certain that different species, formerly known, have disappeared through the quarries being exhausted, and that others, from quarries more recently discovered, had to be put in their place.

Marble is broken out of the quarries by means of explosive matters, in blocks of certain demensions, according to its nature and qualities; the different pieces are then sawn to flags and sold in that shape.

Not only the number and variety of species of marble are enormous, but also the varieties in every species itself. If some sawn pieces of marble, belonging to the same species, were laid one beside the other, we believe many uninitiated would think they had various species before them; the experienced connoisseur alone is able to point out the nature of the different species.

The marble-painter therefore will have sufficient scope in rendering nature in different forms, if he only remains faithful to the leading colours and character. If we consider marble as if painted, as we did with wood, we then see in it a ground and a leading colour, the ground varying in hue or spread in veins; the principal colour over this ground divided into various parts, which look either like lumps, veins, or plain spots, intersected here and there by dark, lighter or white veins.

The marble-painter must take it as a fundamental rule that marble, the colour of which is transparent, can only be imitated by glazing or some similar process.

EXPLANATION OF ENGRAVING IV.

The tools for Marble-painting, like those for Wood-painting, are represented in half their natural size.

No. 1. Sable-brush.

, 2. Spotting- or marbling-brush.

, 4. The same represented in the shape it takes, when filled with a thin turpentine-paint.

, 3, 5 and 9. Flat French brushes.

, 6. Marble glazing-brush.

, 7. Flat, long-haired brush, serving as badger-softener in Marble-painting.

, 8 and 10. Round French brushes.

Brushes No. 2 and 4, represented when new and when used, are soft-haired like the glazing-brush No. 6.

, 3, 5, 7, 8, 9 and 10 are made of hog's-hair like common brushes.

S T. R E M I M A R B L E.

ENGRAVINGS V AND VI.

This Marble derives its name from the place where it is found, St. Remi, on the frontiers of the Grand-Duchy of Luxembourg.

It belongs to those kinds, which preeminently possess all the qualities required for marble to be used in all sorts of work. It has a proper strength and great durability, besides being liable to be finely polished; hence it is easily explained, why this marble is so often used for socles, pilasters, columns, entablatures, mantelpieces, etc.

PREPARATION OF THE PAINTS.

The paints for marble-painting are mixed rather thick with raw linseed-oil; in winter or in the open air a little boiled pale linseed-oil ought to be added, especially when slowly-drying paints, such as: mortuum caput or coelothar, jet-black, etc. are used.

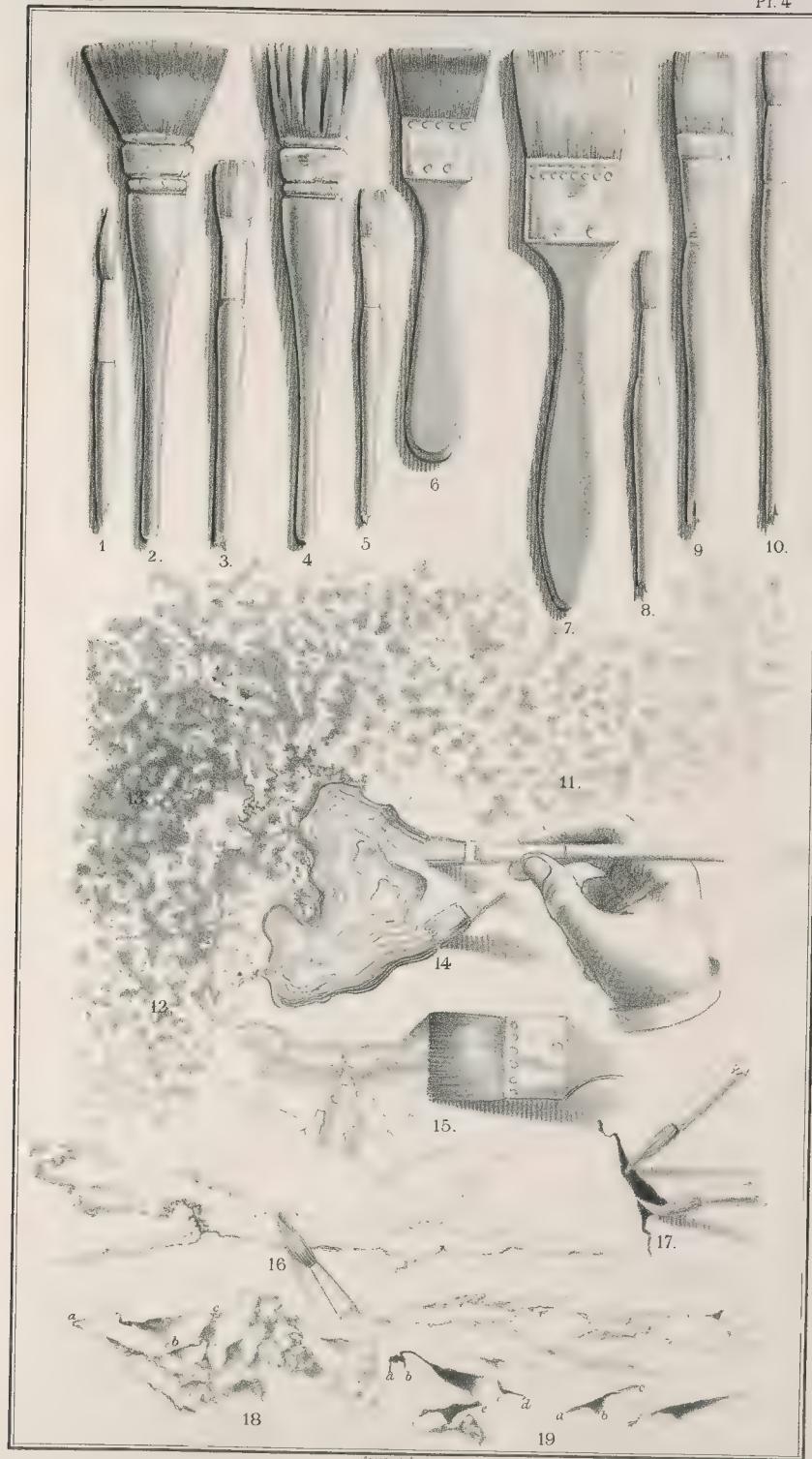
We put it as a fundamental rule to be as sparing as possible in the use of paint, because in the first place the working is facilitated, secondly, because it is conducive to the preservation and durability of the colours.

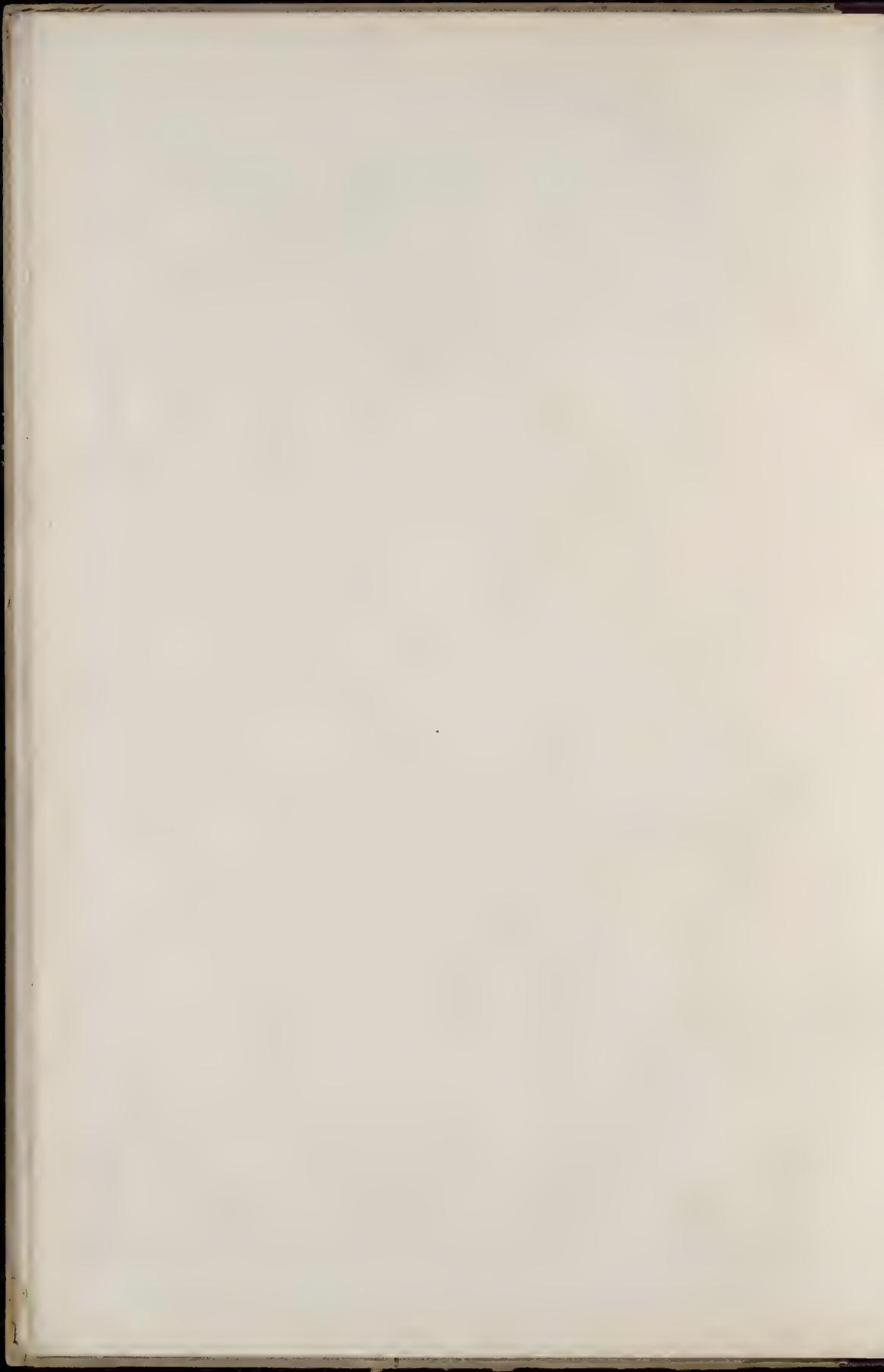
Zinc-white should be mixed or pounded with poppy-oil and a fourth part of turpentine; it is sufficiently well known, that pale linseed-oil is generally used and recommendable, but experience has taught us, that poppy-oil, as far as regards the finer sort of work, renders the colour of the paint more durable. If however the work is exposed to the air or to a strong sunlight, linseed-oil, without any doubt, is preferable, as being better and stronger.

PROCESS OF WORKING.

The ground of St. Remi Marble is light-gray, while we can recommend to rub over the last ground-colouring with common zinc-paint.

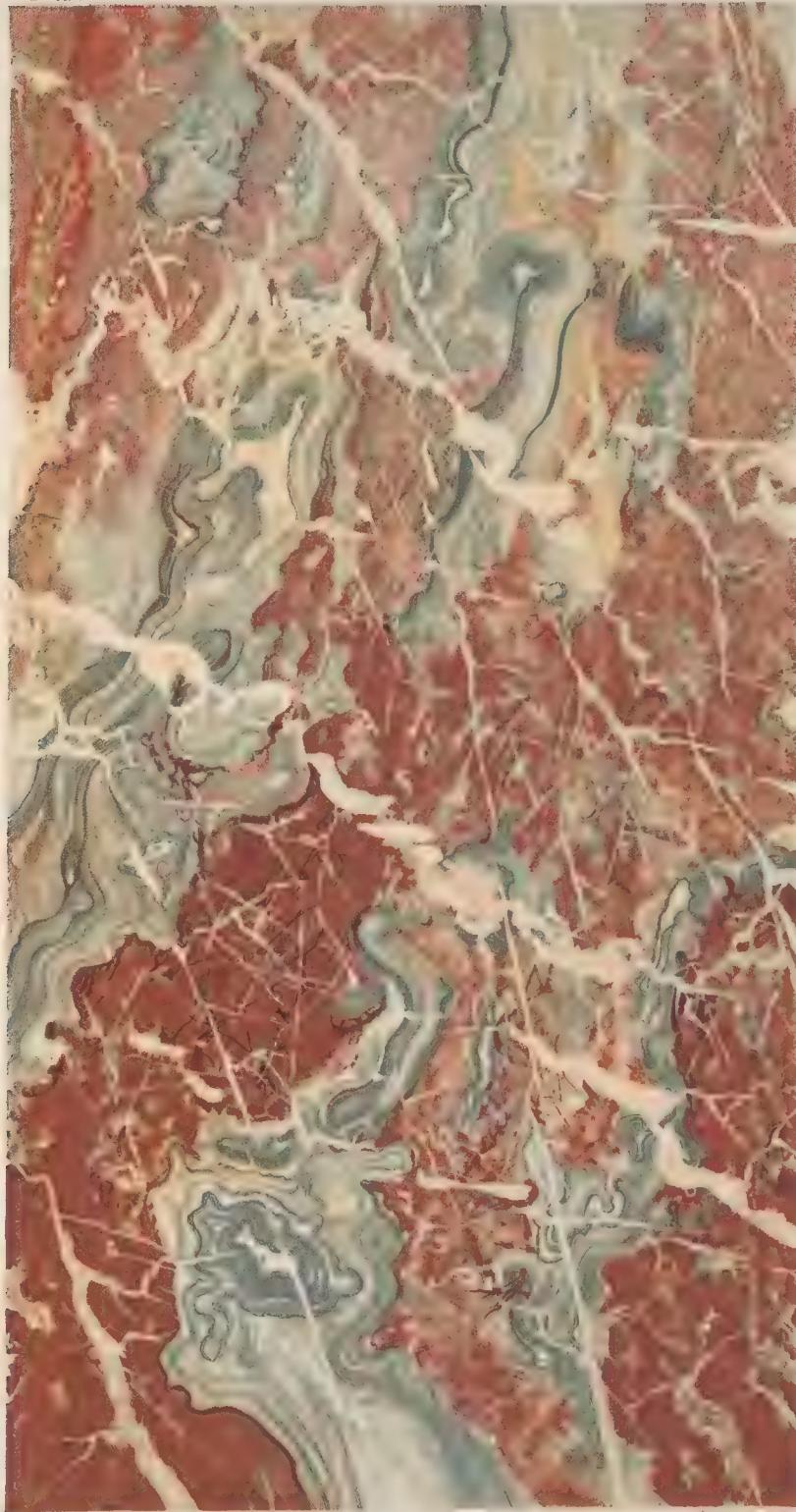
Filling of the palette. At the grasp, the cup, which we described before with the wood-painting, is partly filled with turpentine, to which some white siccative (for zinc-white) is added; then the following paints are placed in succession, viz: white, black, (jet-black) yellow ochre, chrome-orange, Turkey red, colcothar and ultramarine blue.

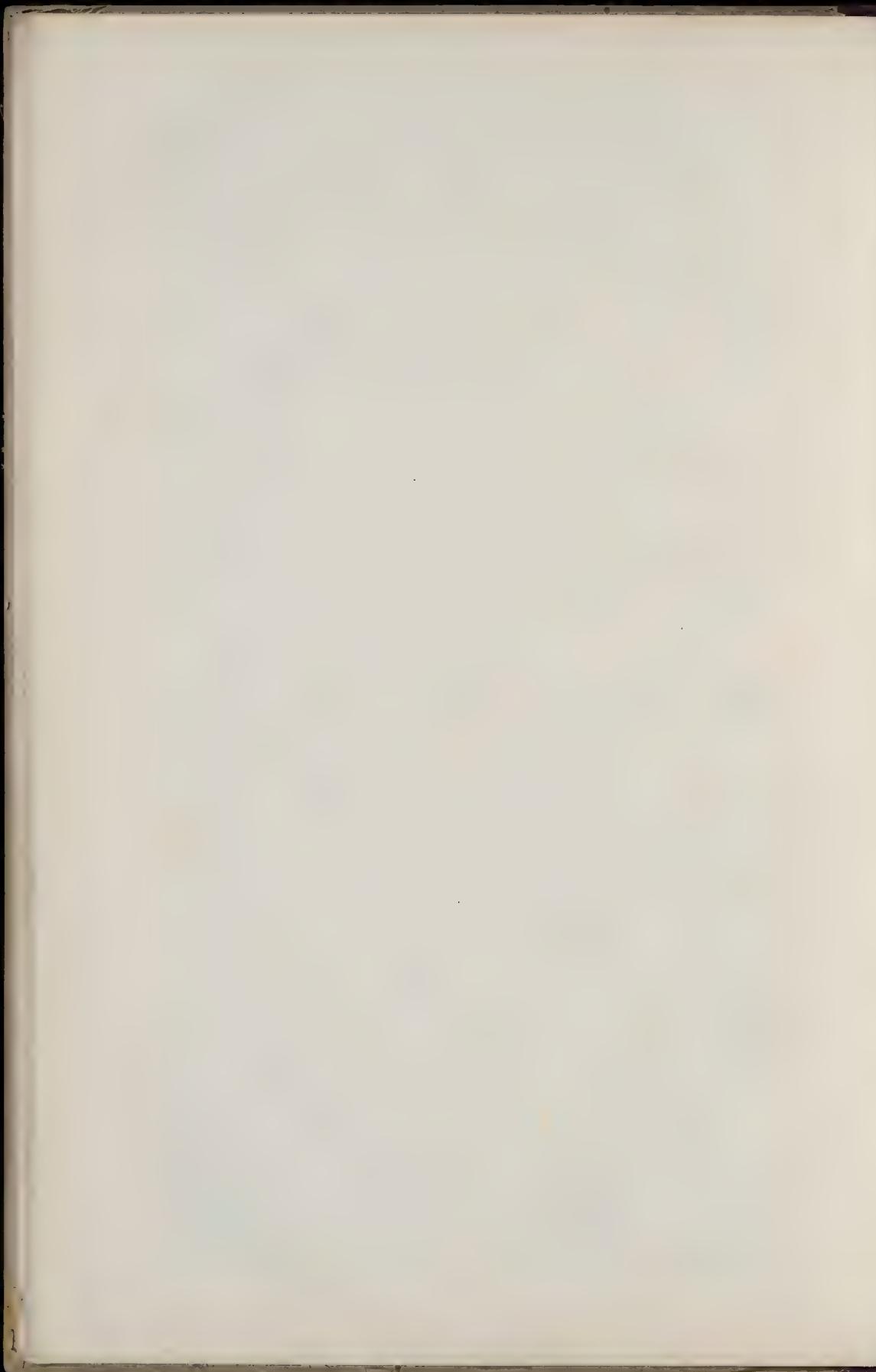


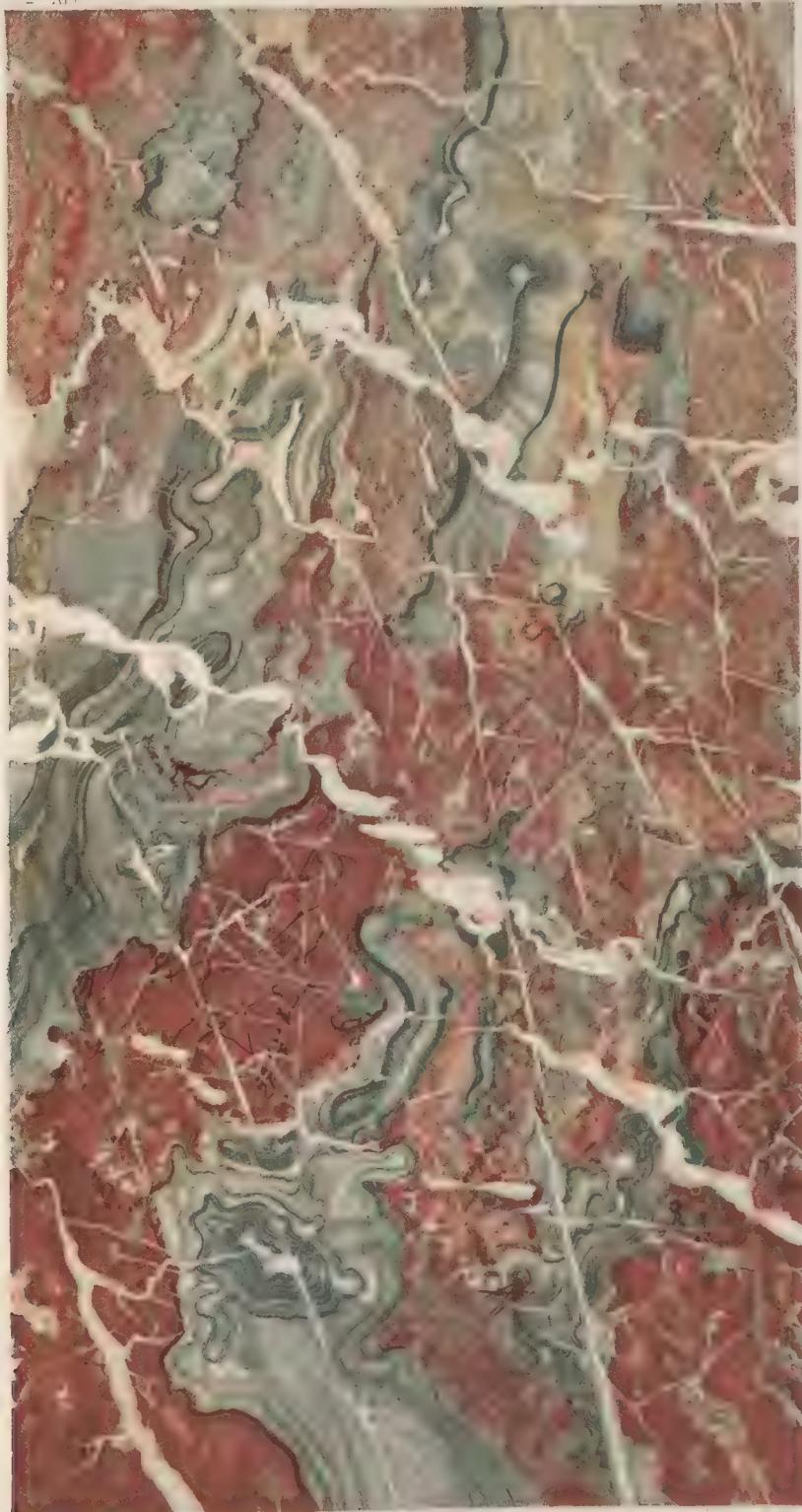


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PI. 5









The board, being well rubbed off, is covered by parties and as sparingly as possible with white, black and ultramarine blue, in some places with ochre and chrome-orange and here and there some Turkey red, so that a blue-gray tint is obtained, a little variegated by the above-mentioned colours blending together. Notwithstanding the paints being sparingly applied, the strokes of the brush must be rubbed away with the brush № 7.

Then brush № 2 is well saturated with the turpentine in the cup, the superfluous liquid is pressed out on the edge of the cup and the brush will assume the shape, represented in № 4.

Then black and ultramarine blue must be taken; the paints should on the palette be well divided in the brush, so that it is filled with a thin bluish black and thus the whole work is spotted, the darkest parties somewhat darker than the others. This spotting should not be done too thinly, but so that it gets the appearance of № 11 Engr. IV.

The marble-glazing brush № 6 being saturated with turpentine etc., is filled with somewhat diluted white and some chrome-orange, Turkey red or ochre, while the corner of the brush is tinged with some black. These colours unmixed must be united in the brush and lightly rubbed upon the palette and then the great gray parties occurring in St. Remi-Marble are drawn. With one stroke these different tints may be laid on sharp or flowing according to the painter's own choice, as they are represented in the sketch Engr. V (Comp. № 15 Engr. IV). Dependent upon the greater or smaller extent of the parties, the flat French brushes № 3, 5, or 9 are taken and prepared in the manner described above.

The brush is filled with diluted white, then with black, in one corner most of the black and when rubbed over the palette, those sharp streaky parties, which may be seen in Engr. V and are represented in Engr. IV № 14, must be drawn. The different parties are easily connected, as it is shown in said Engravings. In small parties, this may be done with one stroke simply by turning or twisting the brush. By experience however, a greater proficiency is obtained and the aim in view will be reached.

From what we have stated, it is clear, that the large broad gray or variegated parties, softly blending must be laid on with the marble-glazing-brush № 6, and the sharp or small parties with the flat French brushes; the different colours mentioned may be changed according to circumstances, as nature itself gives us sufficient scope for varying the parties.

If the work is small, e. g. a small sample, after the parties are laid on, it must be left for an hour to have it well dried; the paint being mixed with turpentine and rather thin, we think that time will be sufficient; with larger works the parties laid on will be sufficiently dry before the next is proceeded to.

The spotting-brush being again filled with chrome-orange, yellow-ochre and a little colcothar and Turkey red, is applied between the ring-shaped parties; by this process the gray spotted ground will obtain the light-red tints occurring in Engr. V and be filled more like Engr. IV № 12.

Now some ochre, chrome-orange, a little more Turkey red and colcothar with a little black are taken; by means of these paints the requisite red principal colour is obtained and for the last time the panel is spotted over in one place more, in the other less, as is represented in Engr. V and Engr. IV № 3, in this way one obtains the required thick red parties, as if sparkled with gray spots, which remain open in the background. Next the gray or sketched parties are drawn round by the French brush filled with the paints just-mentioned. If too many gray spots remain, they must be filled up with brush № 1.

The work having proceeded so far, the paints must be left to dry, so that the dark veins may be sketched with the sable-brush and the parties somewhat shaded; while the light veins are put in with white and a little chrome-orange.

These principal veins render the work most effective and therefore ought to be painted boldly and according to the character of the marble and gently softened to one side by means of the brush № 7. In order to execute this firmly with one stroke, some practice is required; to render it as easy as possible we have given the proper directions in Engr. IV № 16—19.

The marble-grain, as it is represented there, is common to a great many species of marble, and therefore the pupils at our school of art occupy themselves for many evenings in order to gain proficiency in it; and for this reason we advise those, who wish to make use of the work, to spend sufficient time in practising it.

№ 16 shows the way how to sketch the broad straight-veined parties. The sable-brush is filled with white as much as possible, to which a little chrome-orange is added. The paint is loosely put on in a rolling way; the more freely and artlessly this is done, the better it will serve the purpose. With large works this may also be done with the French brush. Next, the veins, emanating from the principal veins, are sketched.

№ 17—19 representing the marble-grain require more practice, as we said before; we shall try to explain it as clearly as possible, in order to make it intelligible to our readers.

№ 17. The brush is filled with well diluted paint; one must begin with the end of the brush, pressing in an undulating direction, till at last the brush gets an almost horizontal position; then the brush is turned up vertically whilst the end springs forward; in this way is formed the elongated triangle with its two thin-ending points. He, who can make this figure quickly and well has surmounted the greatest difficulty.

One must learn not to draw them slowly, but quickly and boldly, as if they are thrown down with one stroke of the brush.

№ 18 and 19 show that every figure has three points or angles; at each of these points a similar figure is made and joined to the others. These junctions are marked *a*, *b* and *c*; never one of the points may be left open. The marble-grain, deviating in all directions, soon teaches how to make those parties, which afterwards will be of so much use to the learner, whilst at the same time the divisions are easily learned with a dexterity, which enables one to fill up a yard within a few minutes.

The marble being sketched and left to dry, is afterwards glazed, by which means the paints receive the transparent tint desired.

The marble-glazing brush, being well purified in clear turpentine, is filled with a little black and ultramarine blue; thus the work is covered with a thin blue-gray tint, some parties according to taste, with the addition of chrome-orange, yellow ochre, Turkey red, etc.

The gray parties on the curves etc. are painted somewhat darker, in most cases straight across the parties and near to the veins as Engr. IV N° 15 and Engr. VI clearly show; the whole being finished off in this way, the dark veins etc. are somewhat shaded, the white veins with white and the little parties with white and the fore-mentioned colours.

What is meant by shading, is not covering again the sketched veins or figures entirely with paint, but as is represented in Engr. VI only touching up here and there, in order better to obtain the different tints and the transparency of the veins.

Afterwards the whole is very cautiously softened with the brush N° 7 and then with the pure spotting-brush spotted with a thin white, so as to leave scarcely any paint.

Though the description may seem rather long, the process itself is however of shorter duration than people would fancy. However we feel ourselves obliged to give this extension to our explanation, in order to make it as clear as possible.

EXPLANATION OF ENGRAVING VII.

The attentive reader must have observed, that, in our text, we did not strictly follow the order of the numbers given to the pictures. The reason of this is, that we were somewhat dependent upon the place of the pictures, as we were obliged to give them their places on the Engravings according to their length or breadth.

In Part 1 we stated that in Part 3 we should recur to several things relating to wood-painting, by which the rules, principally to be observed in this branch, are explained in a comprehensible manner. Although it is our aim to combine shortness with thoroughness, it is unavoidable to fall into repetitions, because we wish to be plain and clear.

PREPARATION OF THE STIFF- AND FLAT-BRUSHES.

After letting the stiff brush stand in water for some time to prevent the hair from falling out, a third part of the hair is cut out with a sharp knife, No. 14, so that it assumes the shape shown in No. 15. The best way is to press the knife as deep as possible into the middle of the brush and to turn the knife round, at the same time placing the thumb against the hair to assure the regularity of the cutting out.

In a few cases a hole is visible, No. 15, but generally the hairs unite again, which however does no harm.

The brush is then laid on a board and in seven or eight places little grooves are made in a slanting direction, No. 16; care must be taken not to penetrate to the middle of the brush. The depth of the grooves in the figures is made greater than is actually required, but this is done to show our intention more plainly. There is, however, no harm in cutting one groove somewhat less deep than the other.

Next, as is shown in No. 17, from the middle of the brush to the end, always in a slanting direction, the outer hairs are cut off in four or five places; then the brush is taken in the hand, the hair pressed on the board with the thumb and whilst turning the brush the hairs at the top are chopped off in a slanting direction as is shown in No. 18. This being done the brush is turned round over a burning candle to remove the irregular prominent hairs. Then taking the bottom of the brush between the fingers it is will rounded on a wet piece of tuff. Every painter knows that the rounding of the brushes has a great influence upon the work to be done, but such is especially the case in this kind of work. It should be remembered, that not the hairs at the side, but those at the top are meant and that the brush requires a rounded blunt top.

The flat brush Engr. I No. 7, and the others, already shown as ready for use are partly chopped, No. 19; this is easily done by taking an old razor and a little hammer. With a sharp-pointed knife four or five grooves are cut out on both sides of the brush near to the tin, as is shown in No. 20. Care must be taken not to cut out too deep or too near to the sides; firstly because the grooves should not meet, and secondly because the corners of the brush would lose all their elasticity. Next, No. 21, the top of the brush is cut out on both sides in a slanting and irregular way and then again ground on the wet tuff, but so that only the hairs at the top and not those of the sides come in contact with the stone.

Here too we must remark that both the grooves are represented too deep and the cutting of the hairs No. 21 too regular, which is done in the first case, to show the grooves and in the second, the slanting direction more plainly. The outside hairs alone may be cut out slantingly on both sides and so that the brush being well ground on the tuff, be like those represented in No. 1-4. The serrate points of the brush must be got on the comb, as we shall show afterwards. No. 22 and 23 show the shape of the brush when seen in a slanting position and in front.

SKETCHING OF DIFFERENT GRAINS.

When the brush is prepared in the fore-mentioned way, one is at liberty which grain to imitate.

No. 1-4 represent different grains We take No. 1 as the thinnest of the simple grains.

After having made the panel free from curdling, the brush, only slightly filled with paint, is taken so that only the sharp corner draws the grain; it will soon be seen that it may be drawn as thin as with the sable-brush; with this advantage however that, as the former contains more paint, the whole vein may be sketched with one stroke and the junctions unavoidable with the sable-brush may be dispensed with.

No. 2 with a finer fibre at the side is sketched in the same way, by filling the brush with a little more paint and pushing it slightly against the comb, with this difference only that the top of the brush is held a little more perpendicular, by which process the veins, shown in this picture, are obtained.

No. 3. This grain, entirely filled up with thin veins, that frequently occur in many species of wood, is sketched in the same manner; it depends however upon the filling of the brush and the pushing on the comb. The brush is filled at the corner with more and darker paint. The position of the brush has already been shown in Engr. I, i. e. almost perpendicular. We cannot help repeating to the interested student to remember what we have said about the up- and downward motion and the position of the brush.

No. 4 is one of the easiest grains to be sketched, provided one has a little practice and a firm hand. The brush is held a little more perpendicular than with No. 1 and by pressing a little more, a perpendicular and broad vein will be obtained.

The veins in No. 2—4 are partly sketched with the brush and partly drawn upwards with the badger-softener.

When a broad grain has to be painted the brush is not large enough to fill up the intervening space at the same time; this difficulty is removed by taking fainter colours and filling it up afterwards. No. 5 is that fine thick grain, which occurs so often; it is obtained by filling the brush sparingly, by holding it almost perpendicular, by using the hairs at the end alone, and by constantly changing their position on the comb.

The use of the brush will soon be mastered by the above-mentioned method, as many species of wood are painted with the same tools, and at the same time it will be observed, that by holding the brush perpendicular the veins become thin, but thicker and broader with a slanting position. When this is once mastered, larger flat brushes are prepared in the same manner, in order to execute works of greater extent with the necessary speed.

N^O VI—X. SKETCHING OF KNOTS.

No. 6 is the first sketch of No. 29. When the stiff brush has been prepared as shown in No. 13—18, a little water-colour is taken and the brush thoroughly rubbed on a rough board, in order to remove the loose hairs, which are perhaps still sticking to it, as the sketching would be impeded by the hairs dropping; then in the same way as the flat brush, it is filled with the required paint; observing at the same time that, though well saturated, the brush must be used when half-dry. The sketching of the knots already described in Part I, is shown here. No. 7 shows the stiff brush, well pushed on the comb and its points reunited by rolling it on the palette. This will enable any one to sketch even the smallest knots by a slight pressure.

No. 8 shows the brush with the hairs at a greater distance from one another, which is regulated on the comb.

No. 9. The stiff brush takes the place of the flat brush, to sketch the knots, that may occur in the short rings and the whole is united with the flat brush No. 10.

The pushing of the brush on the comb No. 11 en 12 should be done with great care; first of all it should always be done in a slanting direction in order not to hurt the hairs, which would else break off; it never is of any use to do this with force so as to leave the impression of the comb in the brush, because the only aim is to spread the hairs; the well-prepared and well-filled brush gives the grain required.

We shall now give an explanation why the brushes are prepared in this way.

The brush is shortened in order to give it more elasticity, to prevent the grooves made by touching the comb from remaining there, because the hairs undulate whilst the little rings are sketched, but retain their position through the elasticity of the shortened hairs.

The grooves are cut out because the hairs can change their places then and if the brush were not thinned, they would come back to their former position.

The cutting off of the outside hairs in a slanting direction takes place, because they should not be united to the grooves and the student should be able to place the hairs according to his will.

From this the reason for the cutting and the grooving of the brush is plain.

No. 24—26 represent the pores already described in Part I. No. 24 represents the brush going up and down, which causes the pores, brushed out with the badger-brush. The less the brush is filled, the finer the pores will be; by filling it more, larger pores are got. The distance of the comb from the panel must be regulated according to circumstances.

GLAZING OF WOOD.

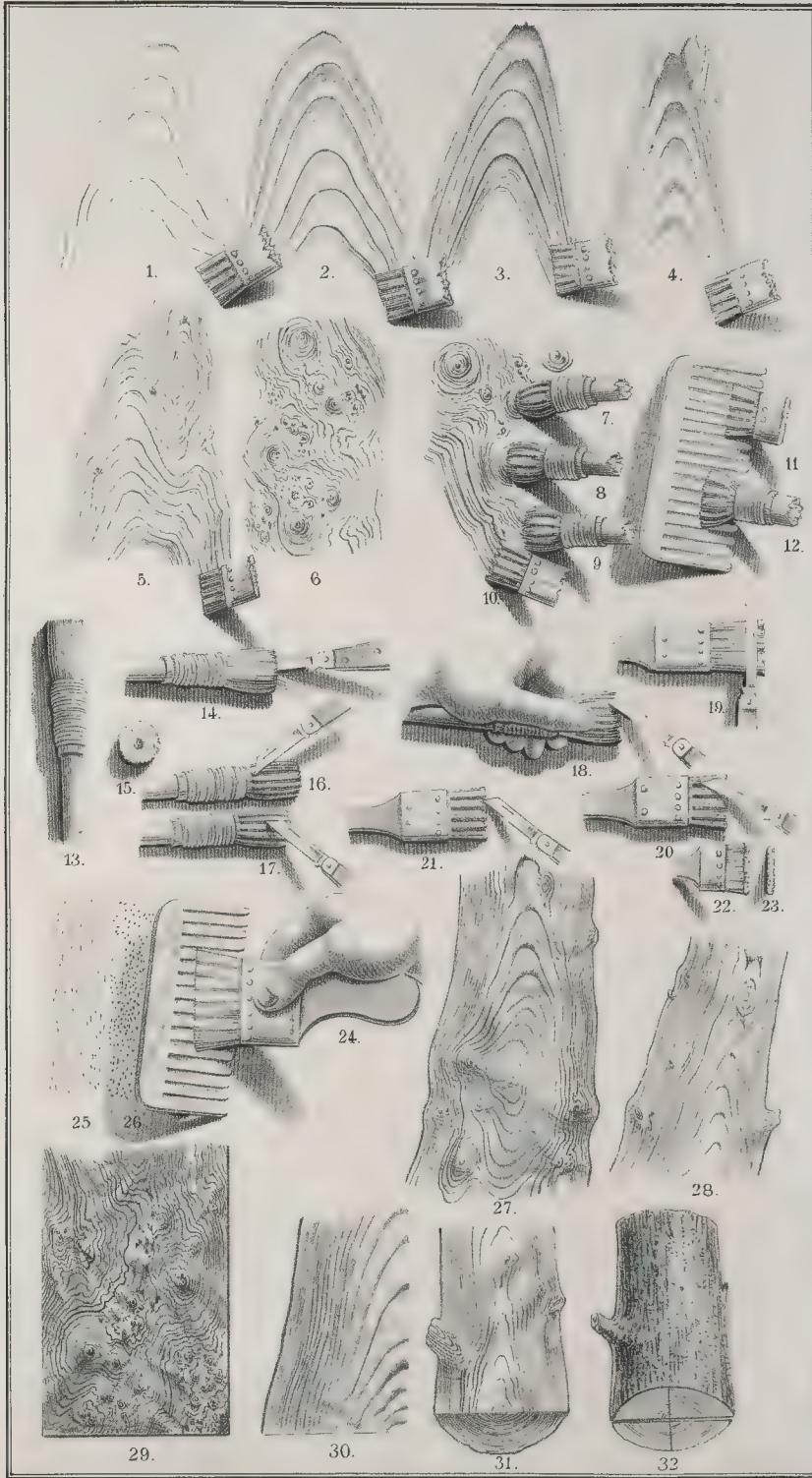
We promised in Part I that we were going to treat this subject here and for that reason have illustrated it.

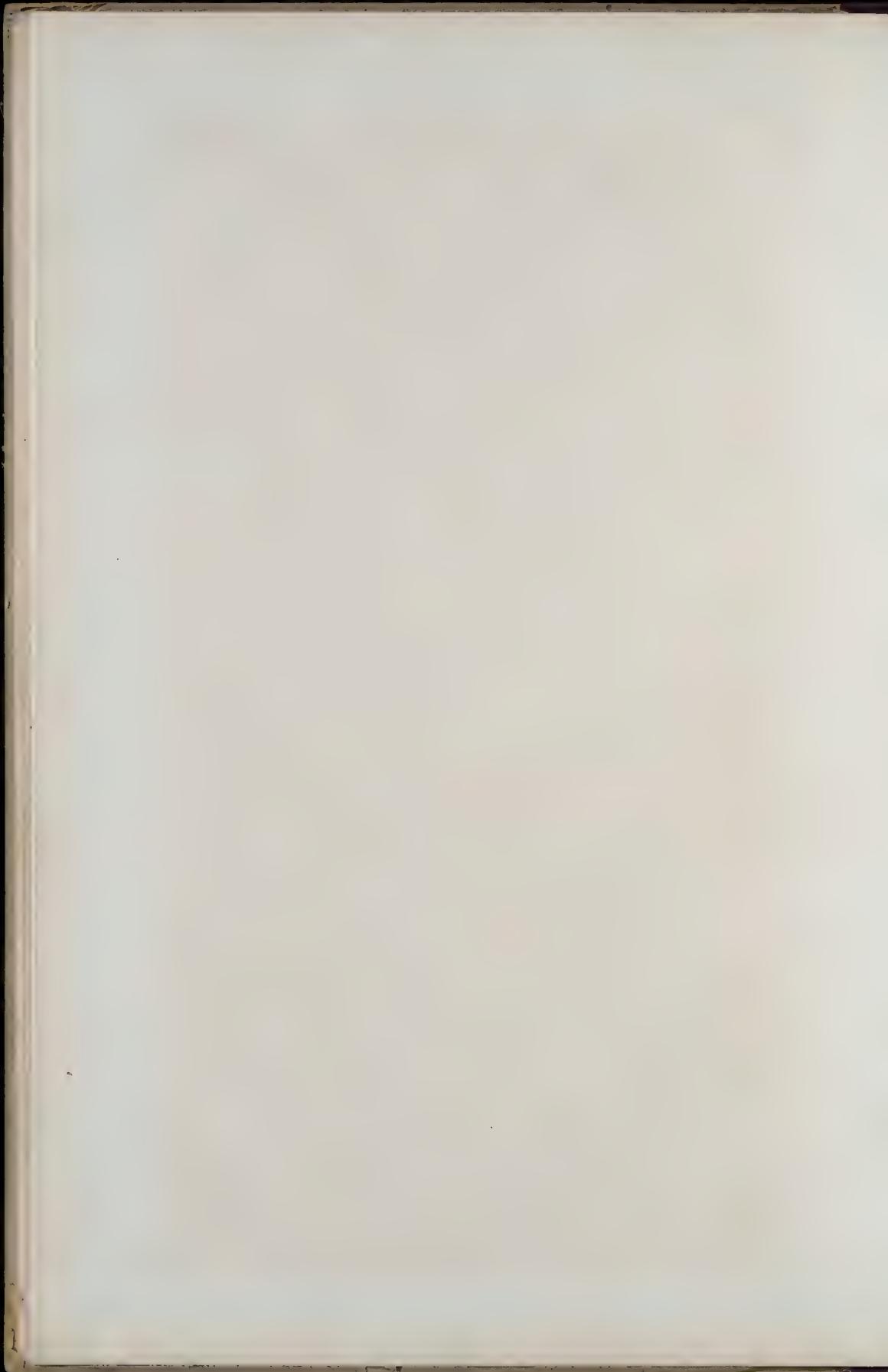
In wood-painting the light which falls on the object to be painted is taken as a basis; we shall imagine it here as falling straight upon the object, which, no doubt, happens in most cases.

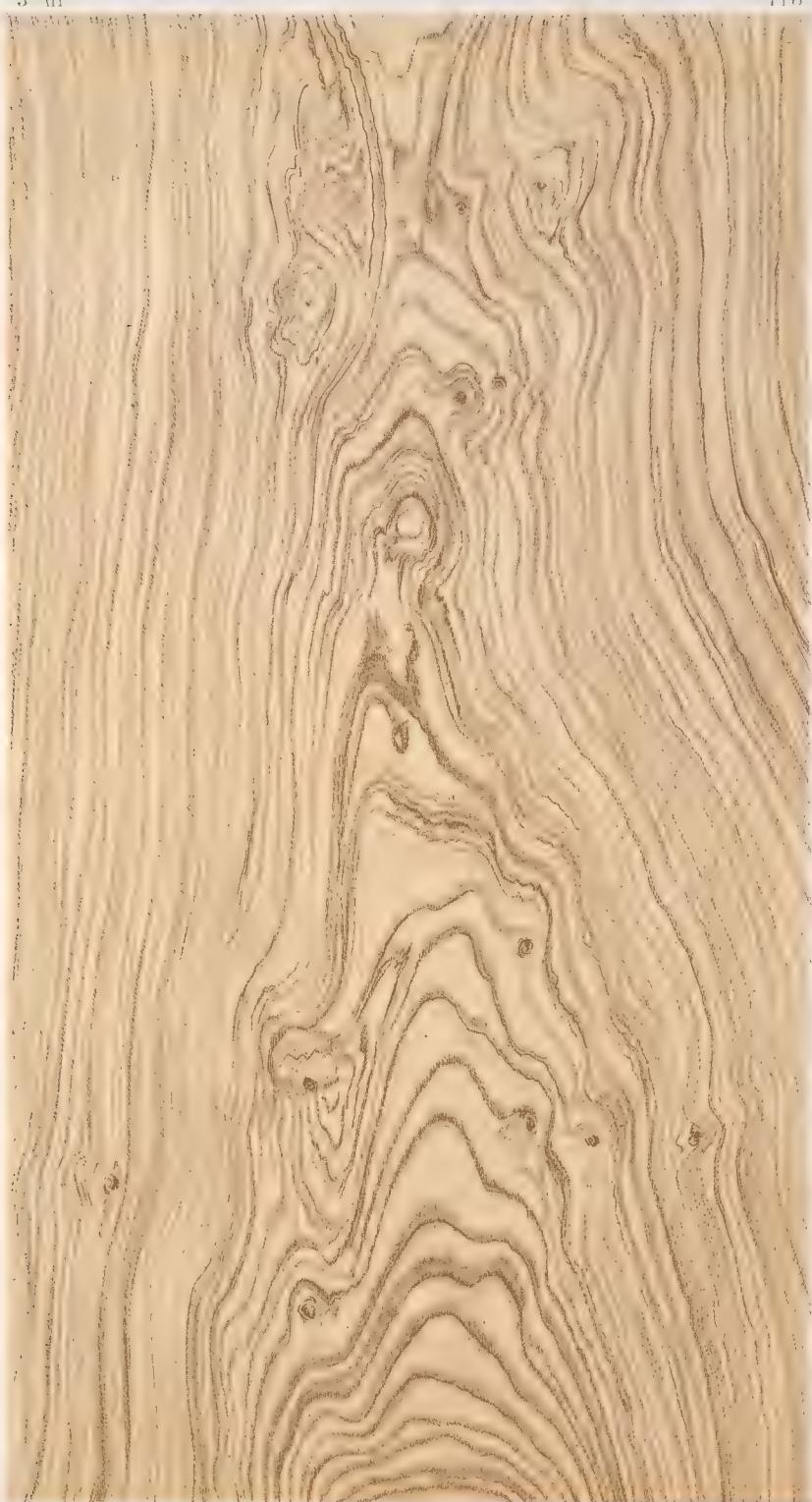
No. 27 represents a glazed board; it will be noticed, that above the knots the light colours are laid on and beneath them the dark ones. Nature teaches us, that such is the rule, showing us that, wherever the grain has the shortest curved lines, light and shadow are the strongest.

In the middle, which forms a long oval, the change of light may be seen in those places, where the lines of the grain turn. It is an undeniable truth that the turning of these lines, from the growth of the branches, the roots of the trees, and many other causes, that create aberrations or curved lines, gives this variegated mixture of colours.

No. 28 shows us the middle of the trunk in an upward direction; the few knots give a little variety of colours, and









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Pl 9





No. 29, the wood from near the roots, on the contrary is full of change which has its cause from the great number of curved fibres and knots.

No. 30 is also entirely uniform, except a soft shade, that may be observed in nearly all species of wood; this shade too has its cause. No. 31 represents one half of No. 32; the different shades will be seen to correspond with the fibres and knots. Let us however imagine No. 31 as sawn through in another direction, as is shown by the line in No. 32, then the variety of colours caused by the knots will be slightly different, but never so large as that which a visible aberration of the fibres gives.

A S M.

Several species of this tree are known, two of which only are found in Europe; the others belong to Virginia, Tartary, Pennsylvania. In order not to deviate too far from our subject, we shall describe the first two only.

The first species, the common ash, is known through all Europe, has serrate-dentate leaves and leafless flowers. This tree sometimes reaches an enormous height and is generally adorned with a large and extensive crown; the leaves are dark green on one side and grey on the other.

The second species, principally found in northern countries, as: Norway, Sweden and Scotland, resembles the first entirely in growth and height; the leaves, however, are larger and thinner.

The ash is firmly rooted and can withstand the heaviest storms. The wood is fit for many things, being dry, white, tough and not heavy in proportion to its elasticity. Because of these qualities it is much used by joiners, carvers and turners for making cupboards, tables, chairs, statues etc. Moreover it does not burst or shrink easily.

PAINTING OF ASM.

The ground for ash is a light cream-colour and is mixed with white and a little chrome-orange. The paints are rubbed with water; with the wet sponge and a little burnt and unburnt Sienna, lake and Cassel Earth; having made the panel free from curdling so that a scarcely perceptible tint remains, it is left to dry.

Next the filled palette, the graining and stiff-brushes, the fine steel comb, the wash-leather and the horn comb are taken in the hand and the paints are mixed according to the colour of the grain, Engr. VIII; the middle parties are sketched with the graining-brush, as is shown in No. 2 Engr. VII; but instead of brushing up this grain with the badger-brush, it must be combed with the steel comb crosswise, through which process the porous grain will be obtained. The fibres at the side are combed towards the outside in a slanting direction and the principal ones touched up a little; as soon as all thin is dry, faint pores are laid on and brushed over.

The glazing of ash is done with the glazing-brush, filled with Cassel Earth, burnt and unburnt Sienna, and a little black for the outside fibres.

The panel is then painted with the same colour, as given in Engr. IX; the half tints and light-parties, having been laid on with the clean glazing-brush, the badger-brush is taken and the cross-pores at the sides are painted, which are afterwards softened by gently brushing them over.

If the colour beneath the knots be not dark enough, a little paint is put in the graining-brush and those places are gently darkened but so that the retouching is not visible.

In Part I we have spoken of re-glazing, for very superior work alone.

When the panel is thoroughly dry is it once more glazed with the same glazing-brush, filled with a well-diluted paint consisting (for ash) of black and a little lake. This paint must be so thin that hardly any colour can be perceived. With the brush No. 10 Engr. I, well wetted and pressed out in the wash-leather, the sharpest tints are taken off, which causes a glittering and fine wood-colour surpassing the expectation.

For Walnut the paint for re-glazing consists of black and Prussian blue.

It is very easy to understand, why the uninitiated easily makes a mistake with this paint for re-glazing. The paints, although sticking well, are loosened a little by this re-glazing, however apt and prudent the hand; the otter's hair-brush takes away the paint quickly and the shine is obtained soon enough.



BRÈCHE (BRECCIA.)

The limits, we have put to our work, do not allow us to give an elaborate scientific description of these species of marble; we shall therefore state only what is necessary for the student to know, in order to imitate it and to answer the questions, which might be put to him.

The informations necessary to acquire a thorough knowledge of these species of marble, are not very easily obtained; and for that reason we shall state in general terms, what we have been able to draw from different sources.

Brèche violette, which will be principally treated here, takes its name from its nature.

Brèche means breach; as soon as it is cut it breaks off along the veins and so forms angular lumps. A great many species of marble bear the name of Brèche, the principal of which are: Brèche d'or, Brèche grise, Brèche d'Alep, Brèche Caroline or Serancline, Brèche doulaire etc. Probably there are more species which, possessing the same qualities, bear a different name.

Brèche consists of irregular and angular pieces of a calcareous and stony nature; in some species, f. i. Brèche d'or, they are more rounded. It is intermixed with different tints and intersected by dark veins along which it usually breaks off. From this we might conclude that Brèche was formed at two distinct periods. We shall try to explain this further.

If we carefully observe the division of colours of this marble we see the large veins united in soft tints, as is the case with white marble and such species. The colours of the large veins follow their own direction even through those pieces, which are formed by the other veins, that intersect the block and although of a darker or lighter grayish violet, are mixed with other small pieces. See Engr. XI and XII.

The breaking off along these veins from which Brèche takes its name, proves, that the substances of the dark veins were not petrified and united to the principal mass at the same time; more over it strengthens our opinion, that the supposition of the learned, that the marble with the dark veins and with her faint change of colours was first united to one mass and already half petrified, is a just one, but that afterwards by various circumstances, as earthquakes, landslips, inundations or other phenomena, the first formation was broken into smaller or larger lumps, and the apertures were again filled up with calcareous spar or other substances. These substances, petrified between the existing blocks and becoming one with them, formed in the second formation, what we observe in Brèche. This is the reason why Brèche is so often found in the quarries with apertures and holes.

Although this description of Brèche is a little superficial, it is however the best foundation for good and accurate work.

Painting of variegated marble without knowing it even superficially, is extremely difficult, for the simple reason that no rules for the placing of the colours can be given. The knowledge, that there are ground colours and veins intersected by the principal veins, is indispensable and in the division of colours the student will seek a division of parties, which will correspond best with the products of nature, however capricious.

BRÈCHE VIOLETTE.

Brèche violette certainly belongs to the finest species of marble we know, and was always much sought after because of its beautiful and various colours. It may be reckoned among the ancient species, as the working of the quarries has ceased, because they are exhausted.

The pieces yet for sale are very dear and difficult to be got, and it is not easy for an artist to obtain even a small piece.

It was formerly found in the Carrara Mountains in Italy, which have always produced the largest and finest quantity of marble.

Brèche violette is found of different colours; the principal colour is a creamy white, with softly blending main parties; here and there with transparent spots, grayish violet parties, inclining in one place to red, in the other to bluish gray, intersected by orange or dark ochreous parties, which take the shape of spots or of deep veins and form the main parties, crossed again by the principal veins, changing into gray, red, violet, and even blackish violet, sharp and broad veins, which are as if sprinkled with fine grains and small pieces.

A great number of varieties are found in this marble. Sometimes one sees lumps almost entirely milkwhite with soft tints, soft and sharp fine veins, which often change into dark lumps and so, that the angular pieces in the first case

are white intersected by violet, yellow or changing colours; in the other case the veins become dark-violet and often broad, by which the whole gets a dark colour.

The student may observe from what is stated that nature again leaves him sufficient scope to act according to circumstances.

The light varieties are generally used for large panels of vestibules, passages, bathrooms, dining-rooms etc., whilst the dark ones are very fit for frames to such light panels.

It also serves exceedingly well for mantle-pieces, although the fine and regular block ought to be chosen for that purpose.

EXPLANATION OF ENG. X.

Engr. X contains the foundations for Brèche violette and those other species of marble that correspond with it in nature and character.

To paint this and other species of marble, first of all a little knowledge of the nature, character, colour, division of ground, and principal parties is required; but this is not sufficient; continual practice is needed to make anything resembling those species of marble, which have the character of Brèche violette.

The marble-grain, as given in Part 2, Eng. IV, No. 17—19, is the basis of the whole work; those pictures, made with the sable-brush, correspond with those of Engr. X, No. 1—6, although they are sketched with the marble-glazing-brush and the flat French brush.

If a person should separate the junctions of the veins of this marble, Eng. XI, with his fingers or with strokes of paper, he would observe this marble-grain every where, and see the divisions of the different parties in the oblong triangles joined together; we therefore repeat once more that it is of the greatest importance to the Marble-painter, to master the marble-grain, as it occurs in nearly all species and renders the caprices of nature without much study.

No 1, Eng. X, shows the marble-grain with the flat marble-glazing-brush. Beginning with the side of the brush, marked *a*, thinly with a small deviation, it is gradually put down as No. 2 shows and thus the oblong triangle is formed; the two corners of the brush are marked *b* and *c*. The corner *b*, in No. 1 marked *a*, is filled with darker paint and therefore No. 2 is darker at the side of letter *b* and lighter at that of letter *c*. The corner *c* is turned up and with the corner *b* the dark side is prolonged a little; No. 3 shows this, but then the sides were changed.

The brush is filled with dark paint in the corner *d* and corner *f* turned up, and thus the side *e* is lighter than *d*, which latter is prolonged to make the junction a little longer. In this manner the marble-grain is represented with one stroke, which should be quickly performed.

The angles *a*, *b*, *c*, *d* and *e* are now the starting-points from which the next grains must proceed, and so the whole party No. 5 and 6 is obtained. The small parties are made with the small or large French brush, as shown in No. 4. Commencing in the same way with the corner of the brush the triangle *h* is formed, then the corner *g* is turned etc. just as described before with the marble-glazing-brush.

No. 6 shows the joined marble-grains partly finished off, i.e. the marble-grains sketched with the flat French brush are finished off to finer marble-grains with the sable-brush, which may be better seen in Engr. XI; but we will explain it afterwards.

PROCESS OF WORKING.

The priming for Brèche violette is white, rubbed over with zinc-paint. Because this marble is too dear to be used out of doors, it is always used for ornament within doors and therefore according to our opinion, ought to be painted with poppy-white.

Filling of the palette. Next to the little cup white is placed, then black, ochre, chrome-orange, red mortuum caput, ultramarine blue and last of all lake or carmine.

The painter knows very well that lake fades away by a strong light and that the colour which is of great importance in this marble, should be durable. We therefore advise to paint a work, which is much exposed to the sunlight, with caput mortuum as much as possible, and to use the fading colour as little as possible, though it cannot entirely be dispensed with.

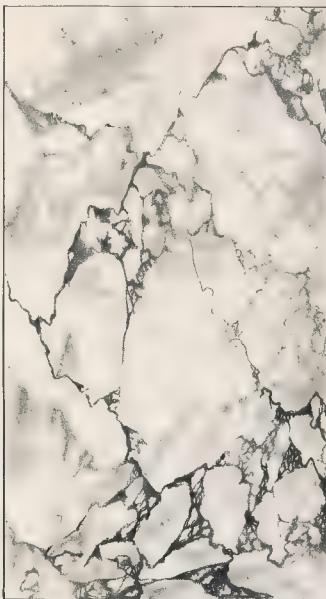
Although carmine is too dear to be found in all painters' workshops we can recommend it however, because it will be found, that in proportion to the little, that is needed, this objection is easily counterbalanced by the satisfaction of having produced work with stable colours, and moreover carmine is so much superior to lake that several metres of Brèche violette may be painted with a dekagram of carmine.



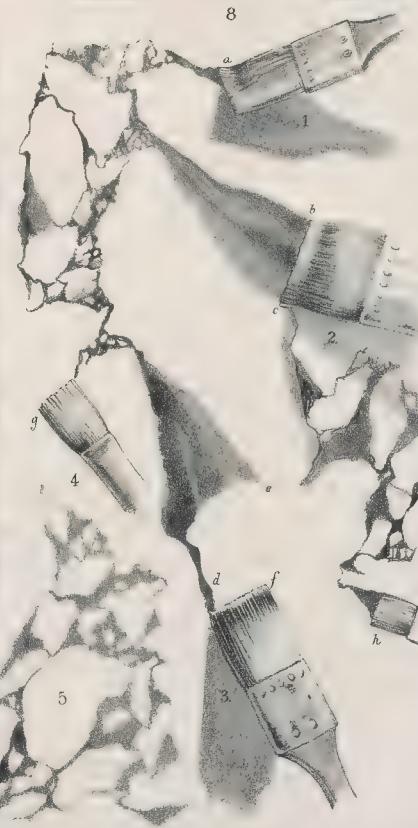
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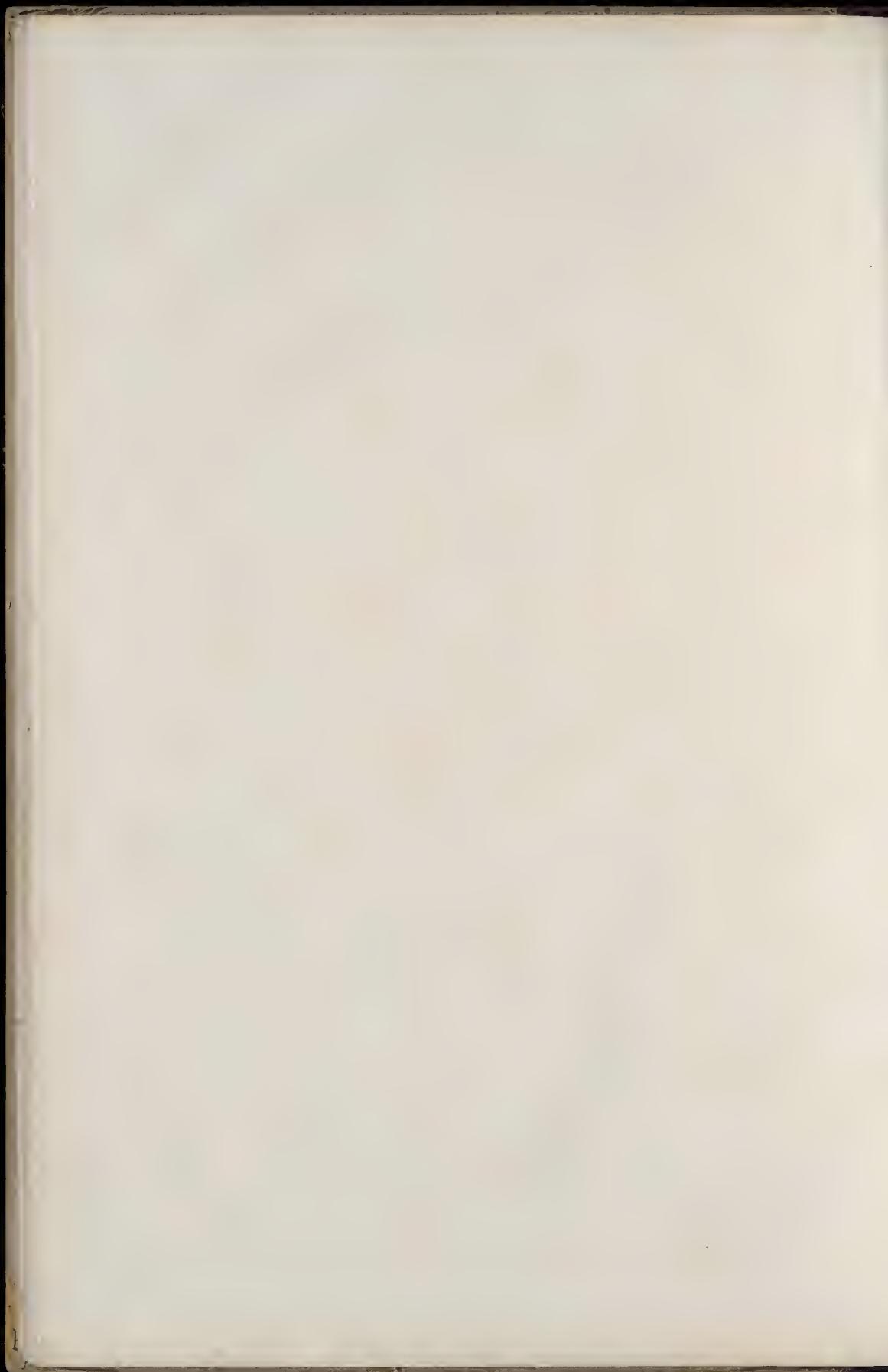


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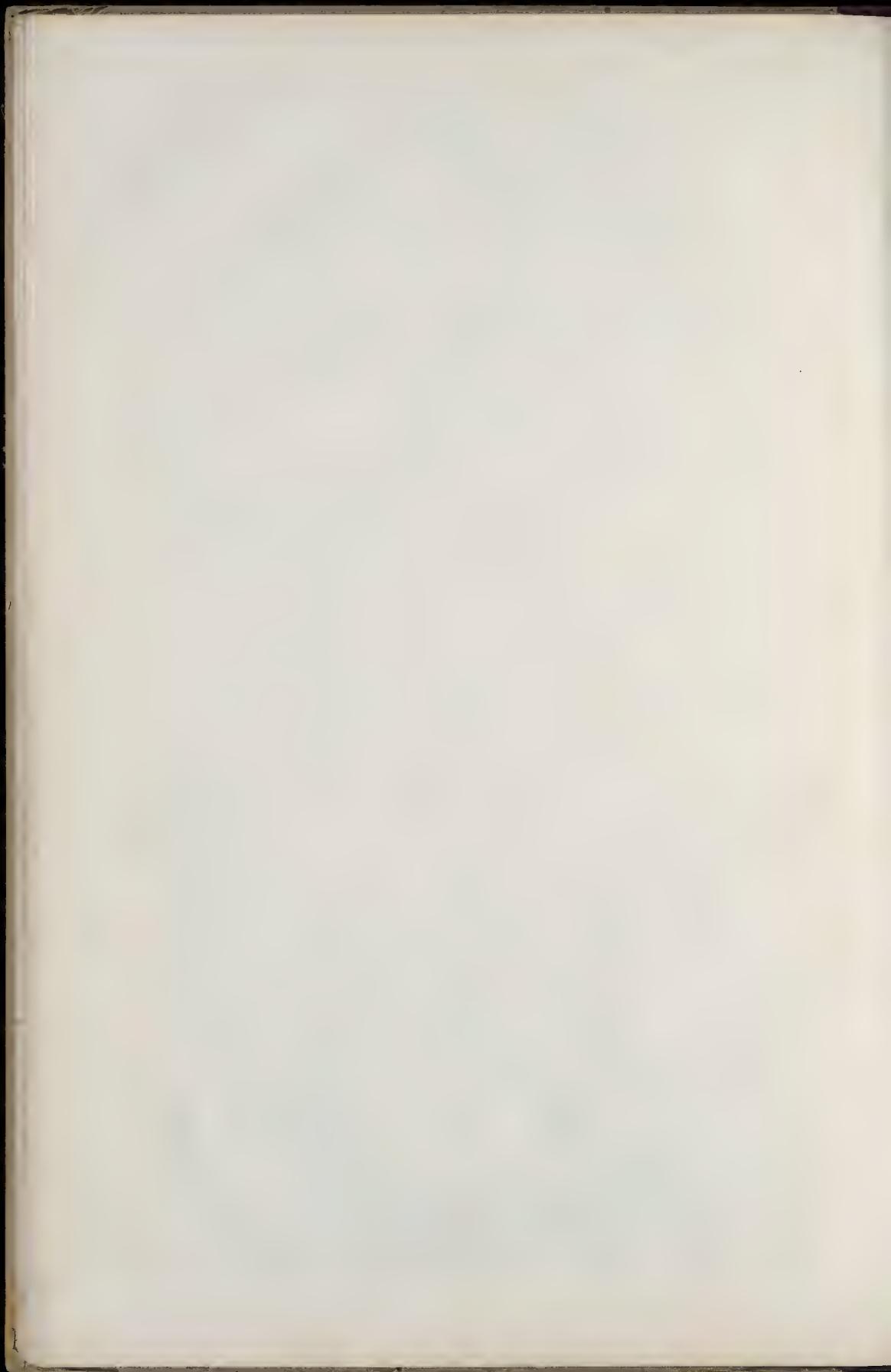
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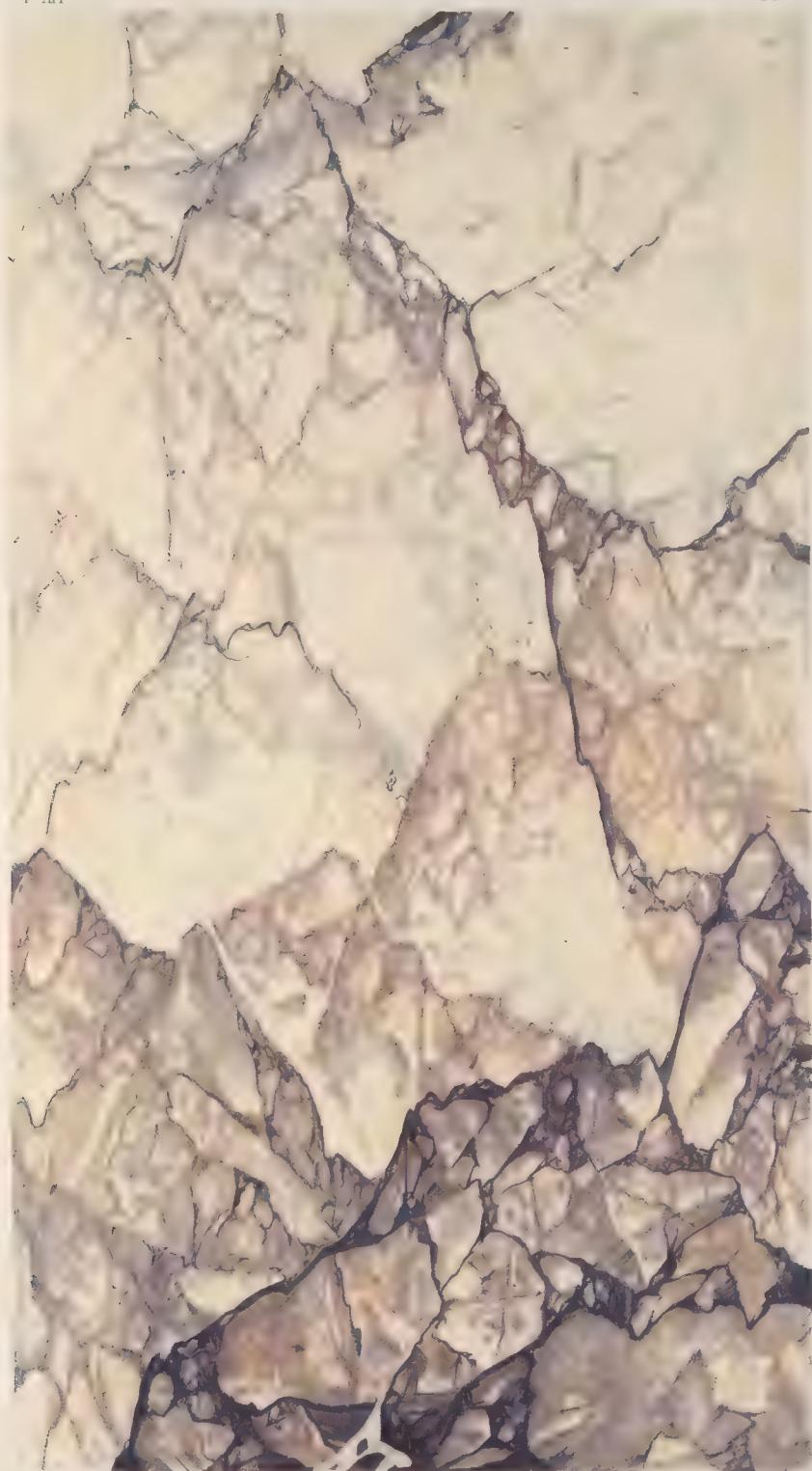
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PL 11, FIG. 6



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This observation should be well considered, so that every body might act according to it, if circumstances require it.

When the priming is well dried, the panel is sparingly filled with white, then some black and ultramarine, ochre and chrome-orange, with some lake and mortuum caput are taken and the first ground is sketched in soft flowing tints, which should be well softened with the badger-brush, as is shown in Engr. X, No. 7.

The whole should be soft and light, the gray as well as the violet colours; it must be covered with bluish-gray tints placed wherever one wishes the different parties to be. The ground-tint in Engr. XI is warm enough; it may even be a little grayer.

Next the marble-glazing-brush is taken, filled with black, ultramarine blue, and here and there some chrome-orange, afterwards with more chrome-orange, lake and mortuum caput; for darker and grayer parties with black, ultramarine, and the last-mentioned paints and so the different parties are sketched, Engr. XI.

In Engr. X, No. 8 these parties are given so that they are sketched in opposite direction to the first-laid ground.

This being done, the flat French brush or the marble-glazing brush is taken to sketch the dark broad veins, No. 9, with black, lake and ultramarine blue, whilst the fine veins, more visible in Engr. XI, are sketched with the sable-brush. With this we need not strictly adhere to the parties already sketched, some are touched up, others filled up with smaller ones; taking care to give most force to those, which must give the proper effect to the whole, and which, not being contrary to nature, are the most graceful, beautiful and proper.

The flat French brush and the sable-brush are filled with diluted white, and some white, inserted where it is most needed, after which the white veins are sketched. With the spotting-brush, filled with a diluted white, the whole is spotted over; so that the light and dark parties are covered with spots. After waiting a little, the whole is carefully softened and left to dry.

Being sufficiently dry the panel is glazed with the glazing-brush, filled with a very much diluted black and ultramarine blue, here and there on the violet parties with lake and sometimes with chrome-orange; in short, so as one understands the work needs.

If one wishes to give a little more force to the dark veins and to increase that force along the veiny parties, this must be done with the corners of the glazing-brush or with the sable-brush. This glazing must be executed with diluted paint, hardly more than coloured turpentine.

Now with the flat French brush and the sable-brush much white is laid on the light parties and the dark ones are only touched up with white. This touching up is, marking a small part of the angular form, and filling the great blank parties almost entirely with spots, partly finishing off the white principal veins and the smaller white ones in the darker parties. Then those principal veins are finished off in their proper colours. Next the whole is spotted over with white. The dark parties very little, but for the white or light parties the spotting brush should be well filled with white; at last the whole is softened with the badger-brush, but with much care so as not to mix the colours.

It is with this work just as with all other kinds, that the same quantity of labour and expense cannot be given to all, and therefore every piece of work is liable to diminution of labour and time.

By painting marble in the way mentioned, nature can be imitated to such a degree of perfection, that an experienced eye even may be deceived.

If circumstances do not admit this elaborate working, it will be sufficient, after sketching, to touch it up with white, the dark and white veins also with the paints required, and to consider the work done, remembering at the same time to sketch the ground lighter and the different parties with more white. The difference between the first and last mentioned work is, that the former will be more deep and glassy and the latter less transparent and, thus show the same difference, as is pointed out with wood-painting.



M A P L E.

All woods, as the reader knows, are divided into different species; but it would be a difficult task to find any genus which possesses more varieties than maple does.

There are no less than 30 different species known, 9 of which belong to North-America, 12 to Europe, 6 very fine ones to Japan, and the rest to different parts of Asia.

We shall briefly enumerate the principal ones, because, as we shall point out afterwards, the acquaintance of the painter with these species may be of much use to him.

The first species is the large Maple, generally known in Germany and Holland, and besides in those countries, found in Austria and Switzerland. This tree reaches a great height, has an extensive crown and a smooth reddish brown bark; its leaves are of the size of vine leaves, broad, dentate, smooth, of a dark green colour and at the bottom greyish. Some of these trees have beautiful variegated leaves with red footstalks. The flowers in long bunches are whitish green and produce flat thin fruits which contain a white seed.

The second species, the sycamore, which is found in Norway, Sweden and Scotland resembles the first very much. The leaves are larger, thinner, provided with finer indentures and not greyish at the bottom. It is often taken for a plane-tree, because the leaves of the two resemble one another. Among these trees some are found with variegated leaves.

The third species, the Virginian maple, resembles the first in many respects, the leaves however are larger and the flowers greenish red.

The fourth species, of the same origin as the third, is distinguished from it by its scarlet blossoms and fruits.

The fifth species, the rock-maple or sugar-maple, is very common in Virginia, Pennsylvania, Canada, etc.; in the months of March, April and May sugar is made from its sap, by evaporation. In Turkey a similar species is found and used in the same way.

The sixth species, also belonging to Virginia, resembles the ash very much in the shape of its leaves and belongs to the largest kinds of maple of Virginia, Canada, and Pennsylvania.

The seventh species, the Tartar Maple, not so long known as the others, has heart-shaped, irregularly-dentate leaves and flowers in long bunches. The eighth species, the hedge maple, is common in Holland, Germany etc., reaches a good height and grows like a shrub. The bark is rough and cracked, the leaves have three or more sharp points, the blossoms are greenish and produce a white seed.

The ninth species, more generally known in France, Canada etc., also belongs to the first species but only reaches a middling height; as regards the leaves and the growth it resembles the last-named.

The tenth species, the striped maple, also called moose-wood, resembles the ninth very much, and has triangular serrate leaves.

Although the account of the various species may be regarded by some as entirely superfluous, it is, nevertheless, necessary to be acquainted with them.

Formerly only one species of maple was painted, but now two or more are used, which are so different in nature, that they have to be marked by various names.

The first two species of maple are common in the Northern regions and therefore well known to the painter; if not, the blame must be laid upon that love of imitation which is so common, whilst the obvious means of reaching the source of knowledge are neglected.

This maple is white, smooth and the grain resembles that of the species, called Erable by the French, but is a little more marked: the tints are violet and yellowish brown, with a silvery shine, generally without any dark tints, but at the turning of the fibres it has a beautiful soft glister, which gives that splendid ivoiry shine. At the bottom of the trunks knotty parts are sometimes found, which are small and generally consist of some little knots in a heap and so divided, that this knotty maple is regarded as a fine wood for doors etc.

This wood is very durable and hardly subject to bursting or shrinking, it is therefore often used for musical instruments, carriages and furniture.

The maple called Erable by the French, chiefly grows in the south of France and in America. This wood has a purple yellow colour and if glazed gets a golden hue, just as many species of wood change their colour by it.

This kind of maple is very much dotted, especially at the outside; in the core there are but few dots.

Formerly this wood, like all others, was sawn lengthwise, at present it is peeled by means of a machine with knives of sufficient length; and thus veneerings of a yard long are produced, the finest of which can be obtained in the shape of rolls.

By this description we think we have shown that it is necessary to the painter to have a little more than a superficial knowledge of the principal species of wood, as it enables him truly to imitate nature.

In order to distinguish the maple, growing in the northern regions, from that of France and America we shall simply call the former, maple, and the latter by its French name, Erable.

EXPLANATION OF ENGRAVING. XIII.

No. 1 represents the grain of the Erable; the lines are roundish and, in that respect, differ from many other species of wood. This grain is thin and has a soft tint.

To paint this grain, one can use different methods. Firstly, one can lay on this grain, whilst the priming is still wet, with a piece of red chalk and then brush it up with the badger-brush. Secondly, after having made the panel free from curdling and whilst keeping it wet, one can lay on the grain with the chalk and then brush it up; wherever the chalk has touched dry spots it cannot be brushed up and will be lost afterwards.

Thirdly, after having made the panel free from curdling and dry, one can lay on the grain with a brush, after having diluted the water-colours with a little gin to prevent the curdling.

We shall afterwards state under what circumstances one method is to be preferred to the other.

No. 2 represents the cloudy parties which are obtained by means of the sponge. In order to perform this well, the sponge is taken in the hand as is shown in No. 4 and 5; the sponge should be of the finest sort, such as are sold by nearly all hairdressers and chemists. When wetted it becomes soft, but its pores do not widen.

The sponge is filled with the required paint and the panel rubbed over in such a manner, that a half tint is left behind. The paint should not contain too much nor too little water; the sponge is squeezed out till the paint, put on the panel, remains and does not flow away. Then one should try, by drawing lines with the sponge from top to bottom, whether the dark forms remain; these will get gradually better. The principal thing is to have the sponge well filled with paint and not too wet.

After having tried this, one begins to work from the bottom upwards; for this reason: the strokes of the sponge, which form the cloudy parties by pressing at first softly and gradually harder, also leave the first impression of the sponge and if beginning at the bottom, the student will always cover that with the next clouds.

These parties should be laid on in small and larger forms and here and there crosswise as the Engravings show.

All this should be done quickly and after a little practice one will see that above the dark clouds light parties are obtained which are formed by the strokes of the sponge.

Next, the badger-brush is taken and with an undulating motion as with all other species of wood, the strokes of the sponge are brushed away in a slanting direction till they are all gone and the clouds are obtained, as given in No. 3.

The undulating motion of the brush is plainly represented by the line *ab*.

Preparation of the brush for the little knots. Whilst the whole is still wet, the knots must be put in. This is done with the brush No. 12. Part I. It is a common flat French brush, represented at half its natural size. After being well wetted and squeezed out, it is divided into two parts exactly in the middle, where a piece of string or cotton is placed, (No. 9) which is tied to the handle of the brush. (No. 8.) This is also shown in Engr. I No. 12 where it is represented when seen sideways.

The top of the brush is divided and so the knots must be painted.

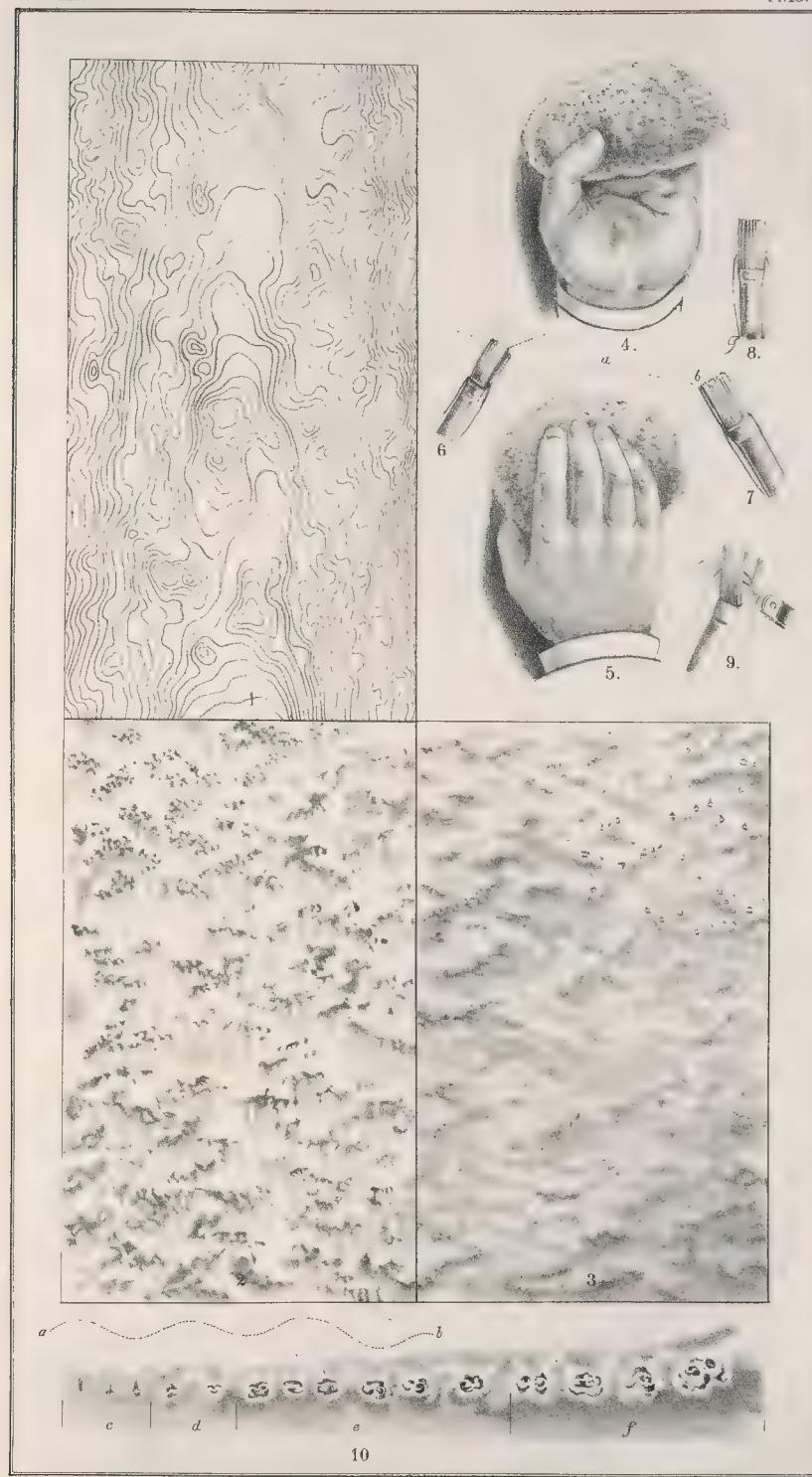
As we have remarked before, every stroke of the sponge has a light side at the top; and by means of the badger-brush the darker parties are blended with the softer tints.

The knots should be laid on in the light parties and this is done by filling the brush with the same paint or adding a little more purple to it, pressing out the superfluous paint and by moving the top of the brush in the direction *as* No. 7.

It will be noticed, that the light parties become clearer and the knot comes out stronger against the dark parties.

No. 6 shows the different directions to be given to the brush, which of course depend upon the shape and direction of the cloudy parties. One will find out as well, that the knots become smaller or larger, according to the position of the brush.

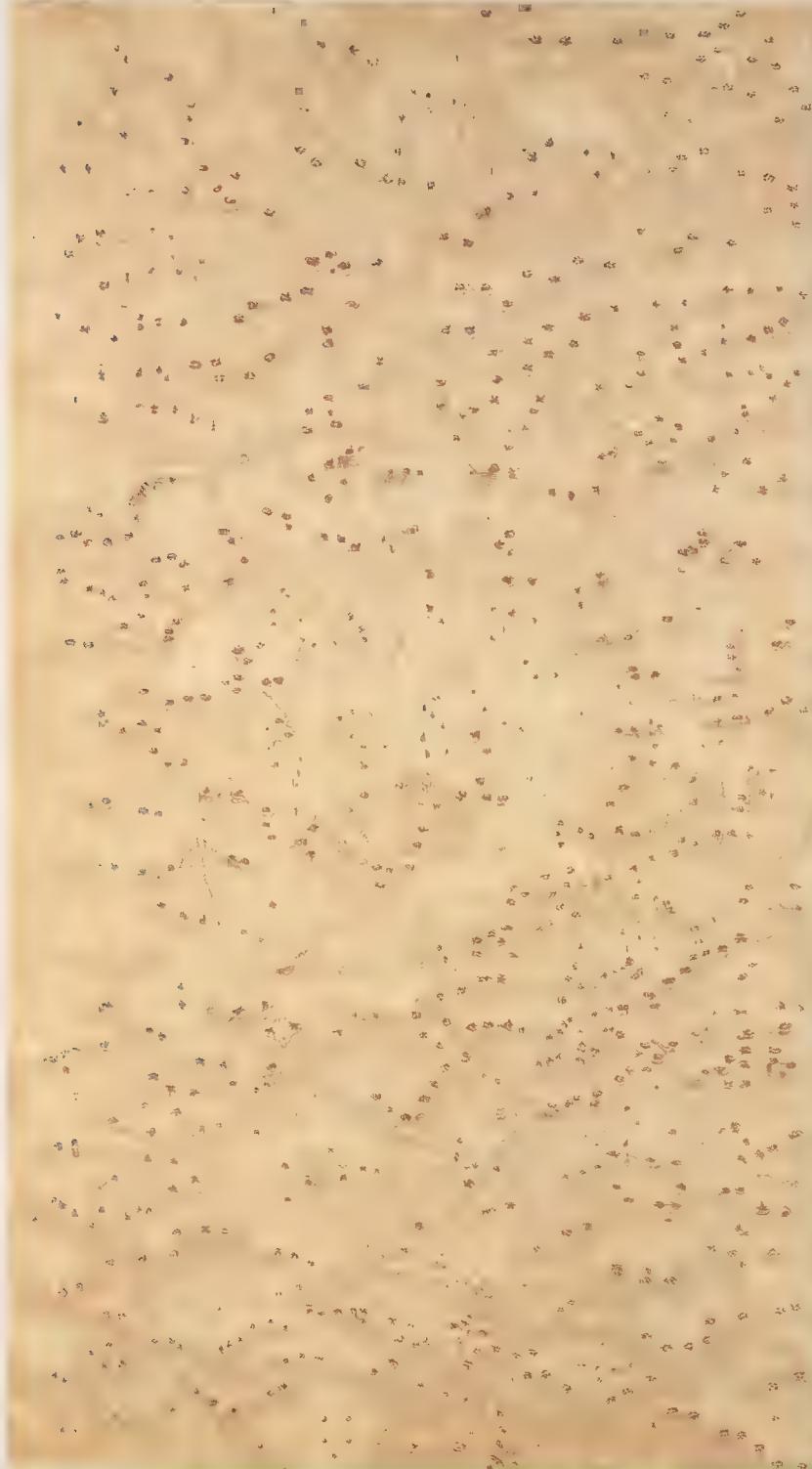
No. 3 shows clearly where the different knots are to be placed. In No. 10, *c*, *d*, *e* and *f* show the natural size of the knots; *c* shows the porous spots, which are obtained by means of the spotting-brush; the knots represented by *d* and *e* are very common, but the largest ones in *f* are seldom found and can be imitated by placing two knots immediately next to each other and drawing half a circle underneath them.

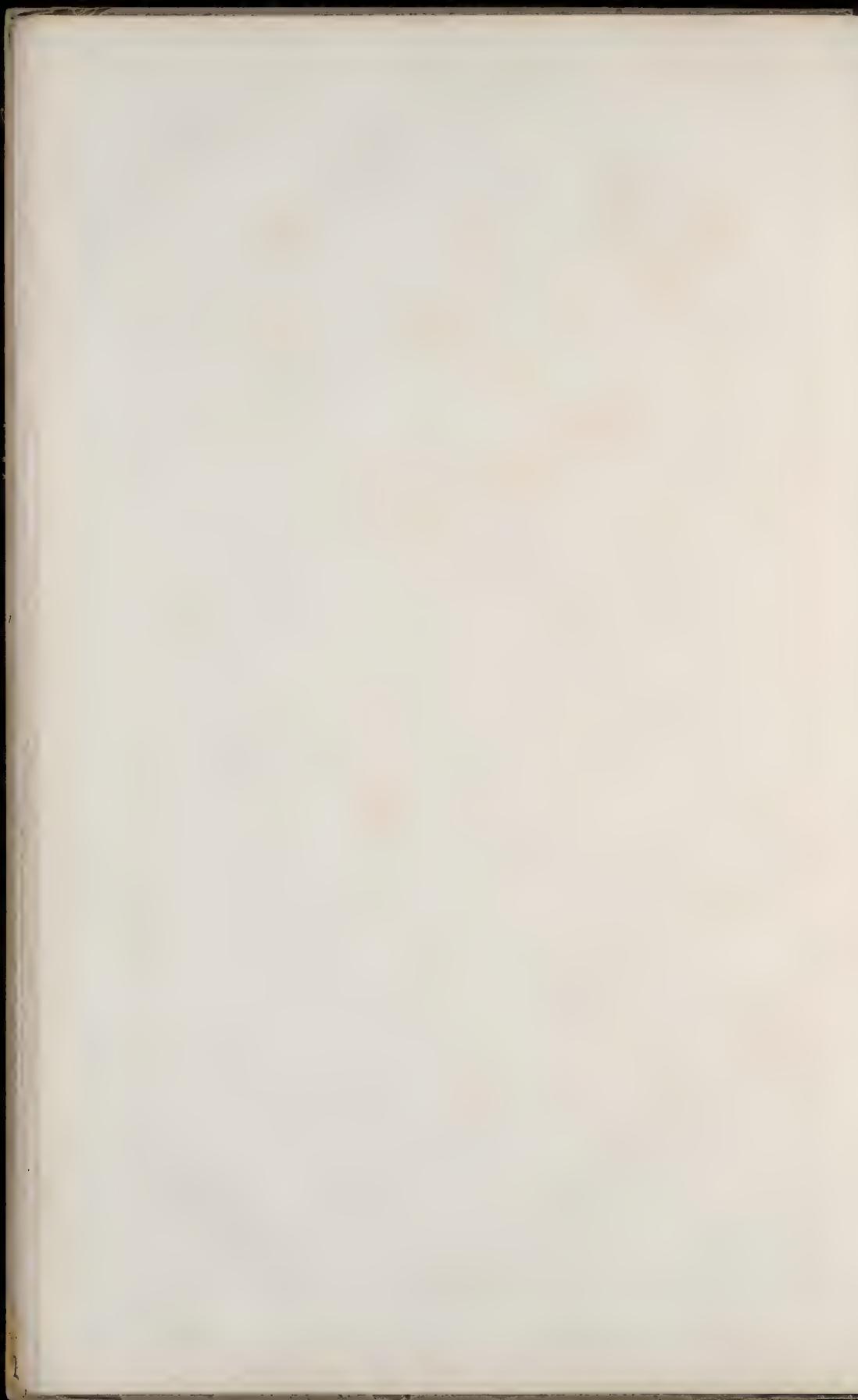




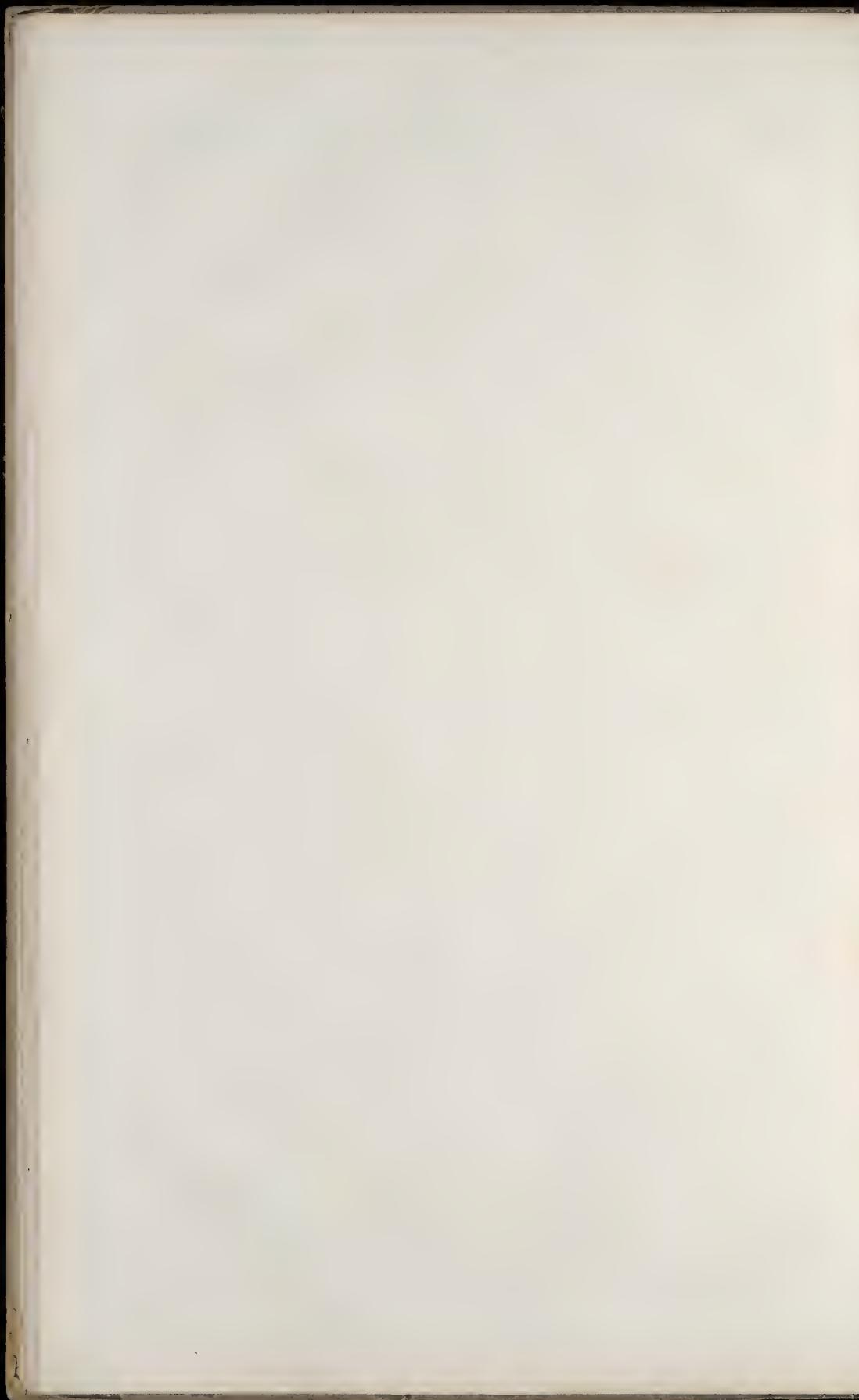
5^e Afl

Pl. 14









PROCESS OF WORKING. ENGRAVINGS XIV AND XV.

In explaining Engr. 13 we have shown the different ways in which the grain may be sketched.

The method of sketching it with chalk on the wet paint is recommendable to those, who have no practice with the sponge, because this grain cannot be rubbed out. To do it with chalk, on the panel wetted with water, is less recommendable. First of all, this grain is too regularly sharp, one is not master of the colour which is too red, unless chalk of the required colour can be obtained; secondly, one should be well practised in laying on the parties with the sponge, otherwise the grain is rubbed away. If the priming is fresh, the grain will stick sufficiently but one runs the risk of scratching; as soon as the paint gets dry, the grain does not hold at all.

The third method we think by far the best; the grain is soft and can be painted with the colour required. It requires, however, some practice. We thought it to be our duty to point out these different methods, and we will now give the best way to execute it according to the last method, so that every one may act as he thinks fit.

The priming for Erable is white.

The palette is filled with Cassel Earth, burnt and unburnt Sienna, lake or carmine.

The sponge, the stiff-brush and the badger-brush are taken and the following colours are put on the sponge, a little Cassel Earth, as much burnt Sienna, a little more unburnt Sienna and lake. If the work is large some diluted colour is prepared beforehand, to get an even colour every where.

When the sponge is well saturated with these paints and the panel rubbed over, the parties required are laid on in the manner described and softened with the badger-brush as is shown in Engr. 13, No. 3 and *a* and *b*; the knots are then placed with a somewhat darker purple tint above the cloudy parties, in various shapes and sizes as shown in No. 10.

Next, the little dots are made by filling a common brush with the same paint and knocking it against the finger; they are afterwards brushed upwards (Engr. 14 as a first sketch shows this plainly). Then the sable-brush or the flat-brush is taken and the grain sketched as shown in Engr. 13 No. 1 or Engr. 15. The sketching of this grain is more easily done by uninitiated persons with the sable-brush, but we always recommend the flat-brush, as the sharp corner of it gives the grain equally fine and more regular. Engr. 7 No. 1. (If the panel should eventually curdle whilst sketching the grain, a little gin should be mixed with the paints.)

Then by retouching, the principal parties are laid on; *i.e.*, one party is made a little darker than the other. This is done by taking a flat brush with a little of the same colour, used before, added to a little more Cassel Earth and masking it here and there between and underneath the knots a little darker, and brushing it up with the badger-brush, so as to leave no traces of it being done afterwards.

Erable is found in various colours; we therefore thought fit to paint Engr. 14 a little lighter than Engr. 15. The knots and strokes of the sponge should be lighter for No. 14 than those of No. 15.

The priming of the former is white, of the latter white with a little chrome-orange and Turkey red.

Silver-maple is painted in the same manner, but differs in colour. The priming is white, the colours are greyish black with a little ultramarine blue, with which all species of silverwood are painted.

Most of the readers know, that these species, just like the green, purple or blue pieces for mosaic-work have obtained those colours by art and not from nature. Thus, as much as possible, the natural colour is taken away from maple and other species of wood and afterwards painted over with a greyish or some other colour.



SKECH OF THE DIFFERENT SPECIES OF WHITE MARBLE.

Of all the species of marble there is certainly none, so generally known and esteemed as the white marble. From off the earliest times it was used in stupendous quantities, and yet in the different quarries known by us such an incredible quantity remains, that it can hardly be guessed at.

Nevertheless, white marble is acknowledged by us to be the best species, that is found, just as our ancestors did before us. The ancient peoples used to make their temples and works of art of it, and in all times white marble was valued most by the sculptor.

The reason of this preference lies entirely in the splendid qualities of white marble, which place it among the best species. The sculptor has no marble which presents figures and forms as well as this; and at the same time there exists no marble, fitter to be chiselled and more suited for works of art. Most species of marble, except the white and the black ones contain a kind of vein, to which the quarryman and the artist should pay attention. The easiest way to break and cut marble is along those veins, which depend upon the causes and circumstances of its formation; this is obvious from the different positions in which those veins are found, sometimes perpendicular, then slanting or horizontal, by which the quarryman regulates his work.

White marble however can be worked in all directions, it has no veins, which would make the sculptor's work difficult and break or peel off. It has the same hardness throughout, differing however according to the various species, and in every respect obeys the tools of the artist.

White marble is found in all parts of the world, the most beautiful at Carrara, which species is of the greatest value. The Carrara quarries extend to the coast of Genoa. The texture of that marble is crystalline, and as for beauty and whiteness, put on the same line with that of the ancient Greek species from Paros (the Turkish isle of Kara, belonging to the Cyclades in the Greek Archipelago); it is only used by sculptors and has for that reason obtained the name of statuary. It can be got in all dimensions required.

In Arabia a clear transparent snowwhite kind of alabaster is found, which is considered as still more beautiful and precious than the just-mentioned. Moreover in Spain, as well as in Greece and Italy, hills and mountains of white marble are found, and even Switzerland, France, England, Germany, Sweden and Norway produce this species, but of a grayer nature with crossed veins, just as Hungary and Upper-Austria. It cannot be doubted, but in other parts of the world, a considerable quantity will be found.

Pisa and Padua, and also the neighbourhood of Bayonne produce an excellent white marble, resembling that of Carrara; but this grows yellow in the course of time and therefore gets a disagreeable colour, especially under unfavourable circumstances.

We do not think it superfluous to remark that experienced connoisseurs can recognize all these different species by their colour, grain and hardness, which should be observed because of the discolouring of some species.

In the Alps and Pyrenees a kind of alabaster is found which, when coming from the quarries, is somewhat soft but hardens when exposed to the air. These species of alabaster vary in nature and colour, but the white remains the dearest; sometimes blocks are found, which, when well polished, are transparent like agate and therefore always used for works of art.

The species of white marble known to the painters are: the pure white, or statuary, without spots or veins; the clouded white, with faint broken veins; the same kind a little grayer; white with darker veins and spots, intersected by cross-veins and also with a gray ground.

In old buildings a species of marble is often found, which one is inclined to call white marble, in which the parties are divided as in Brèche-violette, intersected by gray and yellowish gray and angular parties. This marble is the gray Brèche, already mentioned in part IV.

EXPLANATION OF ENGRAVING XVI.

White marble, clear and of a white colour, is however not so white as one would suppose. Of the pure white marble the one species more than the other is sprinkled with greater or smaller grains or crystals; therefore if painting pure white, that transparent white colour, proper to the pure white marble would not be obtained. If in such cases the priming is made a little gray and the whole is then spotted over with white, the result will be better.

It is therefore certain, that all species of white marble must be treated in this manner.

In St. Remi-marble, though that is of a red colour, we have been able to observe that, by spotting over the gray priming, that transparent colour is obtained, which could hardly be got in any other way. With Brèche-violette it is the same; by spotting the different tints laid on, with white, the little apertures keep that tint and it obtains a transparency by this process. We do not doubt but the painter will already have conceived that by a similar process nature can easily be imitated.

It is of rare occurrence that one has to paint pure white marble and then it is only for statues, ornaments or decorations, because only those things should be produced, which really exist or are made. Floors, pilasters, walls of passages and halls are always of more or less spotted white marble.

Engr. XVI, No. 1 gives the first ground. First white and then black and ultramarine is laid on in cloudy parties, which must be bluish gray and not too dark and well brushed over with the badger-softener, Engr. IV, No. 7. Care must be taken that the ground be faint and cloudy. It is well known from experience, that zinc-white covers badly, and that, by brushing it over with white, a sufficient difference of tint will soon be obtained.

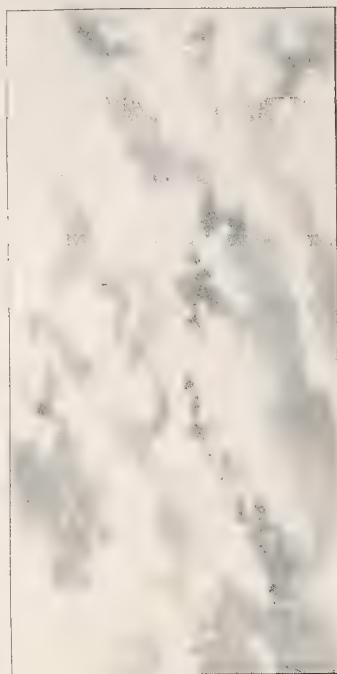
Engr. XVI No. 2 represents a piece of spotted white marble, with soft woolly parties, intersected, in the first sketch by soft veins in a slanting direction. To do this the French brushes, Engr. II, No. 8 and 10 are used. The brush is filled with a little diluted black and ultramarine blue, so that, after brushing it over, a transparent gray tint is obtained. By rolling and dotting, the required parties are formed, shown in a large shape in Engr. IX, No. 4, over which the veiny parties are laid on with a fine long French brush or sable-brush. Next in the direction of the parties, the whole is softly brushed over with the badger-softener, so as to blend the parties with the paint laid-on.

In No. 4 it is shown with a cross how this softening has to be done; f. i. the direction of vein No. 5 corresponds with that of the line *b b*; the line *a a* lies in an opposite direction. As soon as vein No. 5 is sketched, or rather the whole panel or surface, one should first brush in the direction *b b* and then in that of *a a*; one should never go up and down with the badger-softener, but always from the top or from the side downward, according to the lines *a* and *b*, in the same direction, as that of the parties, by which process a dark and a flowing side are obtained, that would be lost if one went on brushing up and down. It is then left to dry, to be finished off afterwards. No. 3 is the more veined white marble, that sketched as in No. 1 and spotted as in No. 2, shows the cloudy or woolly parties with veiny combinations, over which the principal veins are laid in an opposite direction.

No. 4 is a species of white marble, seldom used and not often found, except in some old buildings. As it is so sharply marked it is not much sought after, forming a disagreeable whole.

This marble is milk-white with soft flowing sharp lines and clearly shows to the painter the character and forms of the lines in white marble, which might be called marble-grain.

The placing of these veins looks very simple but it requires practice to place these straight lines with their different deviations so as to form a good whole.



1.



2.



3.



4.







C. M.

P. 12





PAINTING OF WHITE MARBLE WITH LAC-DYE.

White marble is painted in different ways; the custom of painting it with lac-dye is very common in Holland, probably, because it retains its colour much longer and is very shining and smooth. It is however impossible, even with the greatest exertions, to imitate nature by this process, as it is done with poppy-dye.

When the ground is well laid with zinc-white, one or two layers of fine lac-dye are laid on; next a thin mixture is made of blacks or charcoal and a little lac-dye; a little of it is placed on the palette and pure turpentine put into the cup, a thick and soft brush, filled with turpentine and a little of the mixture, is taken. This mixture should be so diluted, as to render the lightest tints of the white marble. The principal parties being sketched with this, some darker ones are placed over them and then finished off.

One may also paint over the lac-dye with Indian ink, rubbed with water and diluted with gin, which gives this advantage, that the softener can be used then, and little spots be laid on with a sponge, etc. With turpentine this cannot be done, because the lac-dye dilutes the turpentine and becomes too hard.

After this the work is finished off with a very durable lac-dye; although we are convinced, that it is superfluous for most painters, we will however state how to prepare these lac-dyes; perhaps it may be useful in some cases.

Zinc-white is rubbed with one pound of turpentine and $\frac{1}{8}$ of oil and so mixed with one pound of white lac and $\frac{1}{8}$ of mastic and $\frac{1}{8}$ of oil, that being used it gets dull within 5 or 6 hours.

If the paint is made too dull, firstly more bars are obtained; secondly, there is much danger of cracking when lacquering it twice, whilst the durable lac-dye would have also to suffer much.

If the dull shine is too strong, it is too difficult to marble, as the turpentine dilutes it sooner and it becomes soft and flowing in finishing it off, or rather when touching it up first in a soft tint and then in darker ones; if finished off with Indian ink it soon curdles and the colours soon begin to grow yellow.

Next a white varnish with a little zinc-white is laid on to take away the yellow colour of the lac. If this is not at hand, $\frac{1}{8}$ of mastic and $\frac{1}{8}$ of oil are taken, to which a little zinc-white is added and the whole diluted with turpentine, till it has obtained the thickness requisite for varnish.

In this way a good durable work can be made, that satisfies the eye, if one will only observe the use of the soft tints, and if possible use three different ones and blend them softly. However to obtain the transparent white-marble tint and to render nature as accurately as possible, the following method is to be preferred.

PAINTING OF WHITE MARBLE WITH POPPY-PAINT

SEE ENGR. XVII AND XVIII.

If a work of some extent has to be painted as white-marble one ought to adhere closely to the species, once chosen; that is to say: that the whiter or darker species are not mixed but one should act like a dealer in marble would do in selecting and using the different species most fitting to his purpose. White marble is one of the easiest species to imitate, if the painter is only well practised in the placing of the different parties of the so-called white-marble-grain. Generally one sees too many straight lines without deviation or sometimes even circular ones which not only make a disagreeable impression, but also are contrary to nature.

The veins in white marble are more or less broken in tints and although they follow the lines and seem to be united, yet by small interrupted touches a continuous whole will be obtained, of which the ground-tints form the connexions.

By making the white-marble-grain, *i. e.* in straight lines with deviations and by crossing the veins, the connected parties are obtained; in the same way by placing the connected and unconnected cloudy spots etc., across which the soft-flowing veins are lying and forming a continuous whole.

The ground for white-marble being carefully laid on, zinc-white is taken, thickly rubbed with poppy-oil and diluted with turpentine, to which a little white siccative is added, to take away the glutinousness or rather to promote the drying up.

With this the work is begun after having added a little black and a little ultramarine-blue (the black colour should be somewhat greyish, what is called blacks) and the ground-tints laid on, as given in Engr. XVII, No. 1. This must be done in light and broken tints. A large or round French brush is taken (for extensive works, a stiff brush, much used, is to be recommended) and the broad veiny and cloudy parties are laid on with it, see Engr. XVI, No. 2 and 4, after which the finer spots and veins can be laid on with smaller brushes; next the finer veins are finished off with a long-haired fine French brush. The whole is then well softened, till all the veins etc. are nicely blended, as described before and shown in No. 4, *a* and *b*.

When the whole is well dried up, the spotting brush is filled with white and the whole spotted over; in those places where one intends to lay the whitest parties, with a well filled brush. If the ground does not seem to be broad enough, this can be easily cured by supplying it with the marble-glazing-brush and diluted tints of black and ultramarine, before it is dotted over with white.

Then the great flat or round French brush is taken, for large works a stiff brush, and the parties between the veins are filled up with spots and between the gray or dark spots with white; beside the veins this must be done on one side, that they may seem to lie deeper, for which process a small brush is taken. Next the sable-brush is taken and the touches already mentioned are laid on the gray veins etc. with black, yellow ochre and a little ultramarine blue, making one party a little more gray than the other, provided they follow each other. Engr. XVIII shows how these touches are placed. The touches ought to be placed there, where the veins are crossing one another. The whole then looks harsh, and gaudy, but by softening it in the manner described, one will obtain that flowing softness so indispensable to white marble. At last the whole is once more spotted over with a more diluted white.

For work of less importance one can finish it off at once and so, that it is quite satisfactory. In stead of waiting till the first ground is sufficiently dry, it as worked over with white and touched up as we have shown.

With this last process one should take care, to make the ground lighter than with the first-mentioned process.

M A H O G A N Y.

Mahogany is one of those useful productions, which, through their durability and beauty, in a short time, have gained a good and fixed reputation, not bounded by distance and soon generally acknowledged and esteemed. Undoubtedly many of our readers will hear with some astonishment, that mahogany has been paid attention to in Europe for only a century, though it had been used already in the year 1597 by the Europeans on Trinidad (America) and by the Spanish and Portuguese. Proofs are said to exist, that the latter built ships of this wood, long before the year 1724, when it was first introduced into England.

The truth of this we leave to scientific men to decide; this however is certain, that many years ago Mahogany had already found its way to the drawing-rooms, and expelled walnut and oak, which formerly occupied the first rank, but had to give way to the durable and beautiful qualities of Mahogany.

The scientific name for Mahogany is *Swietenia* so called after the celebrated GERARD VAN SWIETEN, born at Leyden in the year 1700, and a pupil to the great BOERHAVE. As a physician and botanist VAN SWIETEN gained such a high reputation, that he fully deserved this honourable distinction. When young yet he was appointed a professor in his own country, but circumstances forced him to retire to the Court of Vienna, where he became physician of the Court and died in 1772 at Schönbrunn.

Mahogany, originally belonging to America, is now also cultivated in and imported from Western-Africa, the Northern part of Senegambia, also called Western-Nigritia. This species excels through its splendid, dark colour, excessive hardness and durability and is therefore highly esteemed, although not very workable on account of its hardness.

The Carabbee Islands export, among other fine species of wood, a beautiful kind of mahogany, but principally to America.

The hardest and darkest species are imported from the Eastern part of the United States; St. Domingo, on the Island of Hayti, and Cayenne, or French Guiana, in South-America, also produce some excellent species.

Beautiful kinds of a lighter colour, which do not grow darker by age, are produced both from the American republic Honduras and the English colony of that name; many species of a coarser grain are found there, but they are of an inferior quality. Cuba and Yucatan also send a great deal of mahogany to England

From the statement, that pieces of 1.50 Mètres in diameter and 3 Mètres long have been found, we may conclude that the trunk of the tree can obtain an astonishing thickness.

The Mahogany has a widely-spread crown with shining lanceolated leaves, united by threes and fives to their stems. The calices, hanging together in bunches are of a greenish white colour, and the pods oval-shaped and brownish.

Mahogany is durable and does not readily become worm-eaten. Generally very workable, it has moreover a great variety of colours, from light violet, brown with light golden tints, to dark chestnut. The different grains and various colours give the joiner ample opportunity to make beautiful and tasteful work.

As all other species of wood, Mahogany has its coarse and its fine sorts; the best of them are not very common and generally pretty dear.

The value of Mahogany depends entirely upon the sort, colour and grain. The trunks without any variety of colour and grain are often used for veneering; the blocks, which contain variegated colours, are always put to this purpose and are extremely dear.

Besides the coloured Mahogany we also find a spotted sort, which may be called splendid from the variety of the spots; these are found in all shapes and forms. They vary from oval shaped spots to dots, which, though larger, resemble those of the maple very much.

EXPLANATION OF ENGRAVING XIX.

Mahogany-painting, representing the wood when not sawed, resembles walnut-painting, and by only changing the nature and the colour, it is easy to imitate it in the same manner. The straight fibres in Engr. XX show this sufficiently.

The painting of the veins of silver-wood and all other species of veiny wood, is done in the same way as we will give for Mahogany.

First of all the panel is made free from curdling; next, the brush Engr. I, No. 5 is taken in hand, and well filled with paint, in order to sketch the party with full strokes; as usual one must begin from the bottom. This first sketch should be made with very wet paint, but at the same time care should be taken, that the water-colour does not flow away. In Engr. XIX, No. 1, 2 and 3 the form of these strokes is marked with lines and the way to sketch them is duly given. For that purpose the wood-brush well filled is taken in hand just like the flat-brush, see Engr. I, No. 13, and by keeping the brush in a standing position the painter obtains the same form with well filled strokes, as when sketching the grain. The strokes of the brush are plainly visible in Engr. XX.

The form of No. 1 is erect, that of No. 2 a little curved, while No. 3 shows two curves.

The sketching of the parties, marked by lines in No. 1, is the easiest; No. 2 is a little more difficult because it is more curved. Moreover the side is also given, which may be sketched with the flat-brush; the different parties must be united just as in sketching the grain.

To sketch the curved parties, represented in No. 3, the painter must begin from the bottom, gradually widen the strokes to the right of the line, letter *b*, and keep them together to the left as far as letter *c*. Having got near *d*, he begins to work upwards, till he reaches the line *f*; he then puts the strokes close together to the right and widens those of the lines *e* and *g*. By working round one point in this manner one could easily make a circular figure, which can only be obtained by holding and using the brush according to the directions given in Part I, No. 13 and as regards the position of the brush, in the next Part.

When the sketch has been made, a little sponge is taken, and the light strokes marked in No. 3 by black strokes, are wiped over. One must begin from the bottom near letter *a*, then in the opposite direction *b*, then *c*, etc. till the whole vein is made. This must be done with short strokes; as in No. 3 (letter *e*) every party in at least three strokes, which are broken off. The wiping of the sides is done in the same way with long, consecutive strokes; care should be taken, that these strokes of the sponge follow the direction of the parties sketched, as in No. 3, in which the lines show the direction of the strokes of the brush; the black strokes show those of the sponge, following the direction of the lines.

The three dotted lines show the middle of the vein; care should be taken not to take away the strokes of the sponge any further than the lines mark, and a regular dark middle-party is kept which may be regulated by the following process of working.

After the party has been sketched and wiped over with the sponge the soft-haired brush Engr. I, No. 10 is taken.

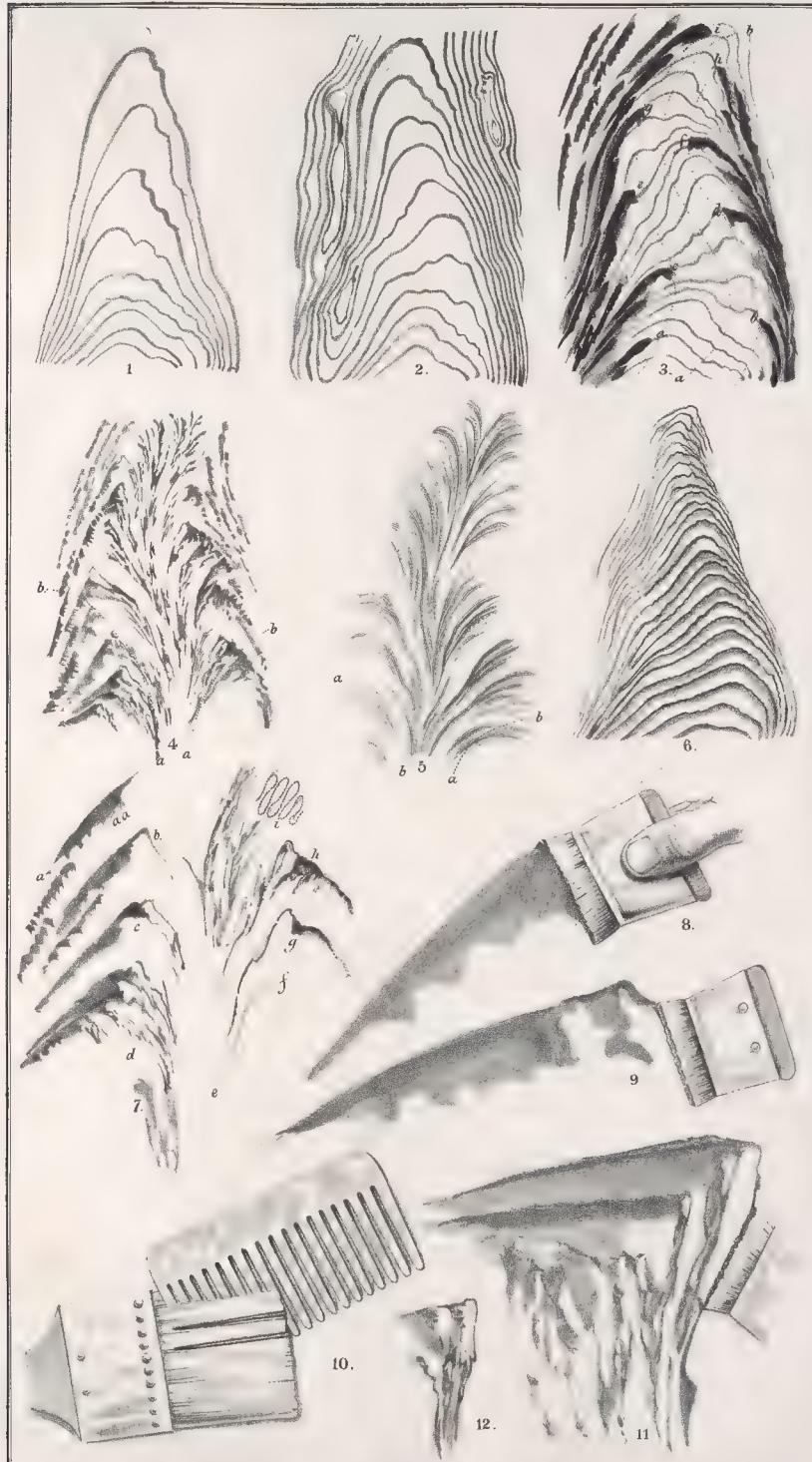
This brush being saturated with water, is dried as well as possible on the wash-leather, the hairs are placed in a standing position on the palette, and then the middle party is filled up.

This filling up requires some practice and we have therefore tried to explain it.

Engr. XIX, No. 4, shows the flowery spots, as represented in the vein Engr. XX; one begins at the left, No. 7 letter *a*; from the stroke of the sponge, made before, the paint is taken away with the otter's hair-brush, by stroking and hacking with the lower side of the brush, see No. 8. Next, a fine stroke is made with the brush at the prominent point, letter *b*, and may be provided with double junctions for broad feathers, see No. 9. Next, another little stroke is added to those junctions, see letter *c*, so that the figure *d* is obtained by thus placing near the junctions short lines broken off and by making new junctions. The left side of the vein is therefore made in a curved shape from the sponge-marks to the diameter, *a*, No. 3; in order to paint this figure easily with the right hand, the left side of the vein, see No. 4, is made in a curved line from *b* to *a*, and the right side from *a* to *b* beginning from the bottom, see No. 7. The broken line, letter *a* to *f*, must be worked upwards and as soon as the sponge-marks are reached, the junctions, given under letter *g*, are made, then again, according to letter *h*, new junctions and new parties. The flowery spots, letter *i* are got by making such swinging motions with the brush, as given above, letter *i*. As we stated above, from the sponge-marks, the first stroke is made with a full brush, No. 9; next, the fine veins are laid on with the sharp side and the end, and afterwards according to No. 11 and 12, the other lines and junctions are made.

When the whole vein is sketched in this way and sufficiently dry, it is touched up, by giving it more force with the wood-brush No. 6 or 7, Engr. I, filled with paint. The tint must not be too dark; but, however, strong enough to mark out the vein sufficiently. No. 5 gives the form of these touches, which must be made on the side where the light comes from.

On the left side of the vein one begins from *a* to *b*, therefore from the top, on the right side from *a* to *b*, but from





7^o Afl.

Pl. 21.



AMAND LITH. AMSTERDAM

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the bottom; the said brush is filled with paint and after having taken off the superfluous paint on either the sponge or the wash-leather, the painter takes it again in a standing position and draws broad strokes in a slanting direction and narrow and thin ones up- and downwards, which become featherlike through the brush being half dry, and which are softened with the badger-softener in such a manner as to blend with the paint first laid on.

The pores are made next and then the grain is sketched; for this purpose the grain-drawer, Engr. I No. 3, is filled with diluted paint and entirely placed on the palette. The brush is then divided on the comb in as many parts, as the extent of the vein requires; see Engr. XIX, No. 10. Of course this grain begins where the vein is broadest, and its thickness depends entirely upon the breadth of the vein. At the sides of the vein this grain may be joined again with the flat-brush. When the grain is still wet one must soften it with the badger-softener from the bottom upwards and the veins will obtain a darker top.

The beginner should first of all try to get that quickness of working, which is so highly necessary. The best way is to imitate these figures on a piece of paper and then to learn to combine them, to make a good whole; without this he will never gain the object in view.

EXPLANATION OF ENGRAVINGS XX AND XXI.

Formerly wood painting was less known; gradually this art was applied in different ways, although without studying nature.

Among the species, that were first imitated, Mahogany takes a conspicuous place. In former times it was done with a wing dipped in oil- or turpentine-paint; afterwards, when the flat wood-brushes made their appearance, people soon used them with vinegar- or beer-paint; the vein was marked with the sponge and by softening it with a badger-softener, a graceful kind of mahogany was produced.

But as all other matters, this art also was improved in progress of time; and we will treat the painting of the veins in mahogany wood and every thing connected with it, in that manner, which has proved to us to be the most fit and proper.

The priming is regulated according to the colour, required for the object which is so be painted.

For dark Mahogany the paint is made of chrome-orange, a little ochre and Turkey red; the darker the wood has to be, the more Turkey red is added. For light Mahogany the priming must be yellower.

The priming of Engr. XX and XXI is made of chrome-orange, some ochre, a little Turkey red and a little white.

The palette is filled with Cassel Earth, burnt and unburnt Sienna, the little cup is placed upon it and then the brush No. 4 or 5, the otter's hair-brush No. 10, the badger-brush and sponge are taken in hand.

The panel is made free from curdling, by leaving with the sponge a little burnt and unburnt Sienna, equally distributed.

With the wood-brush No. 4 or 5 according to the extent of the surface, a little paint, consisting of Cassel Earth and burnt Sienna, is diluted on the palette.

With this brush well filled with paint, the first sketch is made with thick strokes, as described above; the brush namely must be held between the fingers just like the flat-brush is always held, but care should be taken not to twist it, but to work horizontally, by which means the first sketch is made, as the strokes of the brush show in Engr. XX.

(When the weather is dry, it is impossible to finish this off at once, unless one can work very quickly. Therefore the sketch must be made as wet as possible; and after having laid on three or four strokes, one should begin to make the vein). With the sponge the paint is wiped off on both sides in parties, by making short strokes, which are afterwards worked up with the otter's hair-brush. See Engr. XIX No. 3, 4, 8 to 12 and the explanation.

The otter's hair-brush, well softened and dried takes the paint away, even entirely; for the fine lines and flowery spots it must be dried every time on the wash-leather and made sharp and square on the palette; thus one will be able to make the figures which the vein requires, and which are softened with the badger-brush in the direction of the vein from the bottom upwards.

For painting these figures some practice is required, as we already stated in explaining No. 8 to 12; it will be found easier, when the following rules are observed.

1. Let the strokes of the sponge follow the lines given with the wood-brush.
2. The paint in the middle must no further be taken off with the sponge, than the lines Engr. XIX, No. 3, show.
3. The flowery spots of the parties made either with the sponge or with the otter's hair-brush should not be on the same line or opposite to one another (the form would be ungraceful) but must be placed as the letters *a* to *i* No. 3, show.

4. The flowery spots of the principal parties must always be made open and sharp, which is done by using the corner of the brush, see No. 9, which may be easily learned by practice.

The position of the otter's hair-brush depends upon the curves of the figures.

When the vein has been sketched, the sides are freed with the sponge from the paint, which was destined for a grain or light parties, that may be sketched with the flat-brush.

The ground having been laid the pores are made, see Engr. VII, No. 26, and softened in the form of the vein, which is easily done by lightly brushing over the pores with the badger-brush, in the form of the first sketch. By this process the pores will follow the vein as is shown in sketching Engr. XX. Then between the different parts of the sketched vein and here and there over them the touches are laid on; see Engr. XIX No. 5. The touches are laid on to give more force to the vein and to show the flowery parts of the parties better, in the same manner a slight tint is laid on the sides, which is brushed over with the badger-brush in such a manner as to make the strokes of the brush entirely invisible.

See Engr. XXI, which has become darker by this process. These touches, just as the pores, are laid on with the same paint as the sketch but with addition of a little more Cassel Earth.

Next, in the middle of the vein the grain is brought in with the brush Engr. I, No. 3: it has to be filled with the paint for the sketch with addition of a little more Cassel Earth and so diluted, that the colour does not become too dark when brushing it over.

The division of the grain is regulated with the grain-drawer by dividing it on the comb. See the description of Engr. XIX, No. 10. The brush is taken in hand just as when sketching, and the grain is drawn in the same way and in the same direction as the sketch. This grain must be carefully brushed upwards with the badger-brush, and thus a dark tint will be obtained on the upper side.

The grain is drawn on to the sides with the flat-brush and the parties of the sides so glazed that the paints are sufficiently blended.

If one wishes to glaze the work with carmine, burnt Sienna and black, one should first lay on a thin layer of varnish because else the shades would lose by the glazing-process.

We must add yet that the painter should not try to make the colours too glaring with too much carmine or burnt Sienna, as such sharp colours are nowhere found in nature.

SIENNA YELLOW MARBLE.

Sienna yellow marble takes its name from the place, in whose neighborhood it is found, namely Sienna, the capital of the Italian province of that name, in the former grand-duchy of Tuscany, on the shore of the Mediterranean.

This marble has a splendid and deep yellow colour, intersected by variegated veins, which are also crossed by other, still darker ones.

The principal colour is a pale rosy yellow turning to a straw-colour; in the darker parties it assumes the colour of yolks of eggs or rather a deep and warm yellow.

This principal colour is intersected by dark reddish veins, which vary from broad spots to fine veins. These little veins are generally as fine as pencil-marks.

The ground-colour is broken by grey veiny parties which often change into broad spots. (*) These grey veins are generally somewhat broad; the outsides of them a little dark; the inner side lighter. Besides the yellowish-violet veins and spots, the whole is intersected by dark, even blackish veins, which are rare however, but are sharply marked.

A similar species of marble is also found near Verona. Portugal also, and Germany f. i. Bayreuth, Durlach, in Wurtemburg, produce yellow marble, inferior to that of Sienna and therefore not so highly esteemed.

The old yellow marble, which resembles the Sienna-marble very much, is the Dorée; but this is much darker and not so variegated. It is the marble, that Pausanias has called marmor croceum, because of its saffron hue. It belongs to Macedon. This marble is very rare and dear, as the quarries are exhausted, and it is now only found in old buildings and monuments of former centuries.

The Romans especially made much use of yellow marble, and even nowadays, the Sienna yellow marble is a highly esteemed species, which always commands high prices. It is well known, that in variegating the colours, the so-called Isabella colour can always be applied with the most beautiful effect; nay, it may be considered as a truth, that it is indispensable for that purpose.

This marble, by reason of its great variety, gives us the most ample choice. It may almost be called even and uniform; on the contrary there are pieces (see Engr. XXIV) which contain the greatest variety of colours.

The consequence of this is, that, by an apt arrangement of the species required, a whole will be formed, which though gay and full of variety, is nevertheless moderate and harmonious. In one word, a whole, which will never grow tedious because of the harmony in it, and the expressive and yet agreeable and quiet colours.

White marble, however white and clear it may be painted, always loses something of its pureness in course of time; by joining yellow tints to it, this will never be observed. It may also be used with the seagreen and all other species, as stated before. It is necessary however, to make the frames for uniform species of marble a little variegated, but to choose uniform frames for variegated panels.

(*) Of a piece, in our possession, one meter long and half a meter broad, a fourth part is so grey, that, if that part were sawn off, it might be easily arranged among the grey species of marble.

EXPLANATION OF ENGRAVINGS XXII, XXIII AND XXIV.

It would be quite superfluous to give detailed directions for painting Sienna-marble, as we did so for Brèche Violette in Part IV, and the basis for the two species is the same. The sketching of the ground-parties for Sienna-marble and the sketching of the succeeding parties is based upon the same process of working, as given in Engr. X. The marble-grain, of so much importance in this species, is explained as well as possible in the Engraving mentioned, that it may be made more quickly and easily.

We therefore thought, we might use the space of Engr. XXII for giving some pictures, which are of more importance in painting Sienna yellow marble.

In describing Sienna marble, we have already observed that this marble, like all others, has a great many varieties.

It is therefore not very easy, to make a picture in which the colours, and veins, that occur most, are rendered, without spoiling the gracefulness of the whole; or, in other words, to join in a little picture the different colours and characters, which are perhaps found in various pieces of great dimension. The whole would therefore seem compressed, and would look too narrow and too full. It is, however, necessary to point out these different tints and colours, that the student may be enabled to obtain the knowledge and freedom necessary in a more extensive sphere, in order to apply them in a satisfactory manner.

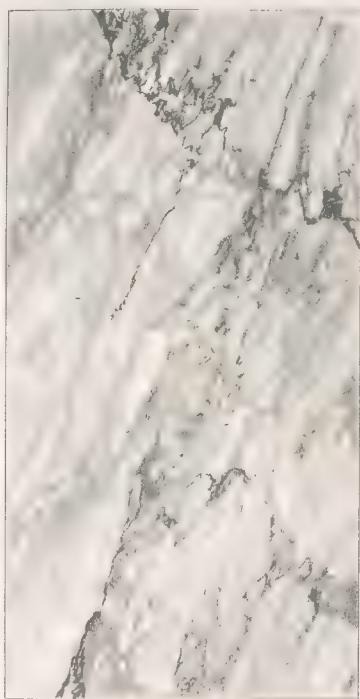
It has always been our intention to join the colours which are found together in the different species; and as we had the whole space of Engr. XXII to our disposition, we could freely make use of it.

If Sienna-marble must be used for an extensive work, we advise to paint it as plain as possible, though well marked with soft tints.

If, f. i., a bathroom or a restaurant has to be painted, the walls and panels of which are divided to be worked up in Sienna-marble, the upper panels should then be painted as is given in Engr. XXII, No. 1 and 2. Suppose the colour of No. 1 entirely yellow changing from dark to light into parties and some smaller parties with a violet-yellow tint; the dark veiny parties dark yellow, intersected by fine shady veins. Suppose the broad cross-veins to be grey and joining the straight reddish-violet veins, which then unite with the dark violet principal veins. Of these last-mentioned few only have to be sketched; or rather a small party on the whole panel as is shown in the dark veiny party in No. 1 at the top, and in No. 2 in the middle, where they intersect the grey or reddish grey veiny parties and afterwards join. For fine work in the colours mentioned a well marked kind of marble may be painted, which is uniform and not too gay and forms a graceful whole.

The lower panels may be painted darker and heavier, intersected by darker lines, as No. 3, Engr. XXII, XXIII and XXIV show. We strongly advise not to use any more tints in one piece than given in these engravings; one should always remember, that we have made these engraving so full of colours and parties, to enable the students to apply them only partly in different dimensions, and that we wanted to represent as many colours as possible of those found in Sienna-marble.

The grey veins in Sienna-marble generally have a soft-flowing dark side, which marks the veins more strongly on both sides; this is shown in No. 4, letter *a*. The dark violet veins also often have darker sides, but this is not found so regularly as in the grey veins. The dark veins are generally interspersed with pieces of lighter hue resembling the angular veins of Brèche violette, as is shown in the party at the bottom, No. 4.



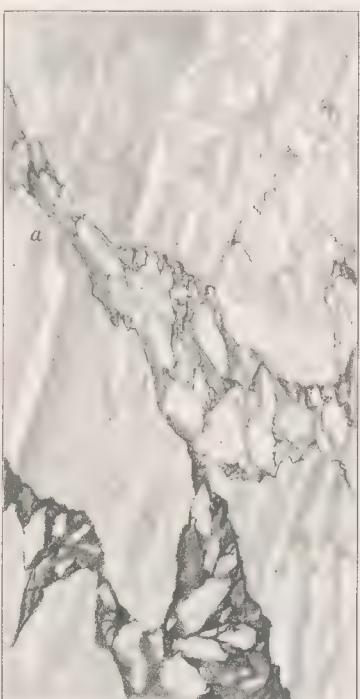
1.



2.



3.



4.











PROCESS OF WORKING. ENGRAVINGS XXIII AND XXIV.

The priming for Sienna-marble is a very pale yellow consisting of white, yellow ochre and a little chrome-orange. When the priming is dry, the whole is painted over with white, black, ultramarine-blue, yellow ochre, chrome-orange, lake or caput mortuum, in such a manner, that a whole is formed divided into parties and tints. This ground should have a very light colour, and care must be taken not to mix the grey and the yellow tints, as a green colour would be the result, but the grey ones should rather be mixed with the reddish or violet ones.

Then the great flat French brush or marble-glazing-brush is taken and the dark yellow parties are sketched with yellow ochre and chrome-orange, and the reddish parties which might also be called violet-yellow, with the same colours in addition to a little lake or caput mortuum; in doing this the marble-grain should be made in lengthened strokes; afterwards the whole is brushed over with the badger-brush.

Then black and ultramarine-blue are taken and the grey veins are sketched across the parties already sketched. With a little lake or caput mortuum, ochre and chrome-orange the finer violet or reddish yellow parties are sketched with the sable brush or small flat French brush; next the small parties of the grey veins, then those of the violet-red or yellow ones are sketched. To the grey parties especially the dark sides must be laid on, and to the violet-yellow veins and parties more force must be given by touching.

With lake, ultramarine-blue and black the dark or principal veins are sketched with the flat French brush and afterwards made somewhat darker with the sable-brush.

At last the whole is spotted over with diluted white, see Engr. IV; No. 11 etc., for a description of this spotting; then it is left to dry.

After being well dried the whole is glazed with the marble-glazing-brush, Engr. IV, No. 4, with yellow ochre, chrome-orange, lake and a little chrome-yellow, the parties sketched here darker there lighter, sometimes more-violet, as the parties show or require.

(As we have shown with Brèche violette, glazing consists in brushing over the whole with a diluted turpentine paint, in transparent colours, with the brush mentioned, by parties.)

The grey parties are glazed little or only partly. For glazing this marble the paints should be well diluted with turpentine, in order to obtain a transparent yellow colour or any other required, agreeing with nature.

Next a diluted white with the said colours is taken, to finish off the parties in the colours they have. This finishing off is nothing else but giving light sides to the parties, that require more strength or should come out more strongly, or finishing them off like veins. The grey veins especially, that are lighter in the middle, must not be forgotten. Then the veiny parts of different colours are touched up as given in Part. IV, Engr. 10. The dark or principal veins are touched up and finished off with black, lake and ultramarine blue, the whole is then spotted over with turpentine mixed with a little white, the white veiny parts are brought on and finished off, and so softened with the marble-glazing-brush or badger-softener that the veins and parties are soft and flowing and yet well marked.

It is hardly necessary to state that the marble-grain plays a principal part here, as the engravings show this; it is also necessary not to mix the colours too much, but to take the different tints in the brush, by which means the colours will be more variegated and pure and the whole obtain that freshness, so indispensable for painting Sienna-marble.

A P P E N D I X.

This appendix will perhaps be of little interest to many readers, especially as in reviewing the art of painting many things will be mentioned, that are already generally known. As it is our purpose, however, to go through the whole art from the first principles to the finishing of the work and to add some particulars of uncommon occurrence, we do not doubt but the reader will here and there observe some thing that may be of use; we will therefore use the remaining space to give to this appendix the extension necessary for being well understood.

We experience daily that to every body things occur which, if they had been properly looked to, might have been avoided or at least modified.

Our readers must also have met with different processes of working, which may be applied to, the one more the other less sufficiently. It is therefore without doubt that for every art it is a first requisite, to be acquainted with it as well as possible, which acquaintance cannot be obtained but by regarding it from the most different sides.

We say from the most different sides, as firstly it is impossible to mention every thing good in our art in a work of such limits as we have put to ourselves, and secondly, because it would be beyond our reach to give one maxim as a principal one. We will try however to state what seems to us most fit and durable and willingly give our own experience to whosoever wished to make use of it.

The first work for a new building is the painting of iron with red-lead or minium and the priming of new wood.

The painting of iron with red-lead. Often the painter has to hear the complaint that, although well covered with red lead, the iron begins to rust after a little time.

It cannot be denied, that in this department many things might be improved, which improvements could be applied to, although they are not unconnected with difficulties.

When cast iron or wrought iron is painted before it is exposed to the air, it will be less liable to rusting underneath the paint, which swells up and afterwards falls off.

To prevent this entirely is beyond a painter, who only lays on the paint according to the orders given; but it is highly desirable that in foundries and smithies the iron, when warm, should be plunged in linseed-oil or covered with a coat of red-lead.

For new wood, especially doors and things exposed to the influence of the damp air and thus liable to swell or shrink, it is recommendable, to have it covered with a thick coat of paint as soon as possible.

Generally with painting too little attention is paid to dust and dirt; the careful workman afterwards has the trouble of removing it, as else the work would become sandy, which might have been prevented from the beginning. For priming a new piece of work white lead with some ochre is advisable; this paint should be mixed with equal parts of boiled and of raw linseed-oil, so that the coat of painting be rather thin.

In the course of time one often sees the most beautiful things injured by the resin flowing from the knots. If the work is worth this being prevented, the easiest way to do this is, to take a sharp chisel and partly to cut out the knot, and to cover it then with a thin coat of lime, by which process the fatty substance of the knot is prevented from operating; with a little putty the hole is filled up again. A solution of gum-lac in spirits will also answer the purpose.

When the building is ready for it the panes have to be put in. If the panes are of a large size, the best way is to fasten them with pegs, but for work out of doors it is desirable to use putty, for a third consisting of boiled oil. If the putty is too soft, not well prepared or soaked with boiled oil, it becomes rough and difficult to work with.

One should always put the hollow side of the pane inwards, and place the purest panes on a line with the eye.

For such things as lamps in yards &c., it is more desirable to place the hollow side outwards, because the rain can thus flow to the middle, and not drip off along the putty and leak through with the slightest aperture. Between panes lying across one another a little space should be left, to allow the rising vapour to escape. The best method however is the new one of using hollow zinc frames.

How to make putty is well known; for floors it is recommendable to mix it with a third part of ashes well sifted, as this becomes very hard afterwards.

Putty has undergone a great many changes of late; white-lead-putty is no longer used nowadays.

Pipe-clay putty is equally good, less costly and more easy to work with; it is eminently fit for work which has to be polished, as it is more easily rubbed smooth.

To prepare it, pipetclay (as pure as possible) is taken, broken to pieces and dissolved in water (to hasten it, hot water is taken), till a thick mixture is obtained. Next $\frac{1}{2}$ of white-lead and $\frac{1}{4}$ of mineral white are taken and after being brought to the thickness of paint with boiled oil, $\frac{1}{2}$ of the dissolved pipe-clay is added and well mixed.

This composition can stand rubbing with water and can also be rubbed smooth when painted; when mixed with a little more pipe-clay it can be rubbed smooth with a pumice-stone; and when mixed with less pipe-clay it can be used for out-of-door work.

The putty used by carriage-painters, is laid on with a brush. For this purpose the pipe-clay is mixed with more water and the white lead and mineral-white with more oil. The oil should be raw linseed-oil. When using it, a certain quantity of extract of oil is added to make it dry and for the sake of the colour a little black may be added, then two or three coats are laid on (every coat must be left to dry sufficiently) and afterwards rubbed smooth with water and a pumice-stone.

Putty for filling up the rents of the ceiling we hope to treat of afterwards.

J U N I P E R.

Although this species of wood is not generally found in our immediate neighbourhood, it is well known in most countries and is found from North to South.

In Spain the Juniper Tree is called *Enebro*, *Ginebre* and *Zimbro*, in Italy *Genepro*, in France *Genévre*, in Germany *Wacholder*, in Sweden *Enbuske*.

The Juniper tree counts various sorts, the growth of which depends upon a more or less favourable ground. Generally we divide them into two kinds, the shrubby and the arborous ones; the shrubby ones, which obtain a height of from two to three mètres, seldom have a straight trunk; they are generally bent and have a rough bark, whilst the arborous ones, also with a rough bark, reach a considerable height and often grow very thick.

As this tree or its wood may be little known to some of our readers, we will give some sorts and particulars, which we have collected from various sources.

As a proof, that the ancients already knew this tree and its qualities, we find it mentioned in the Bible, viz. Ps. 120, verse 4 and Job 30, verse 4.

From the Juniper tree we obtain sandarach (a name used by the Arabians).

The Juniper tree is the best of all kinds of wood to make charcoal of, as its heat and durability cannot be equalled by any other kind.

The berries, which grow on the Juniper tree, are of great use in the gin-distilleries; the distilling of gin from these berries is said to have been invented by JOHN BAPTISTA, SON OF HENRY IV.

The wood has an agreeable smell and resembles that of the cedar; the fibres however are at a greater distance from one another and almost without pores. It can easily be carved, has a beautiful grain and colours, and is seldom worm-eaten. It is certainly strange that it is so seldom used for furniture.

The Juniper tree and shrub are both evergreens, and thus offer an agreeable sight on the sandy grounds, where they are generally found.

The Juniper shrub is found in the Northern countries as far as France; it has narrow leaves with sharp points and berries of the size of peas, which are green in the first year, and obtain a bluish black colour in the next, when they get ripe.

The mountain-juniper is dwarfish but resembles the sort just mentioned; its berries are more oval and its leaves a little broader.

The Juniper-tree is principally found in the South, especially in southern France, Spain, Italy etc.

The Spanish Juniper-tree grows high and thick; it is often called the Spanish cedar, although the Juniper-tree has black berries of the size of small filberts and the cedar scaly fruits. The leaves lie close together.

The Virginian Juniper-tree, by which name it is often designated, is also frequently found in Caroline etc.; the leaves lie close together and the fruits or berries are not so large as those mentioned before or those of the Spanish Juniper-tree. Although the Juniper-tree is found in different parts of the world, as on the Barbadoes, the Bermudas and on the islands of the Indian Archipelago, the Spanish Juniper-tree is considered to be the largest and thickest; and is generally used in Spain for furniture and carpentry.

EXPLANATION OF ENGRAVING XXV.

Before we begin to treat the subject of the Juniper-tree itself, we must first finish off another, which is of too much importance for imitating all species of wood, that it should not be described more extensively. We mean glazing in general; although we have given a description of it before, we consider it right to take it up again and to explain it a little better by engravings and descriptions.

It is a certain truth, that we acquire habits without being conscious of them and which are not taken notice of, till some accident or circumstance draws our attention to them; and this is also the case with glazing or the process of working.

The habit of using small brushes in sketching the colour of the wood and laying on the tints of light, has become such a great necessity, that for small tints the smallest brushes are used. The consequence is that the painter is impeded in his work and does not obtain what he wants. By drawing attention to this fact and showing its incorrectness, we hope to succeed in making the painter follow our directions.

The paint for glazing must be laid on with the full glazing-brush in such colours, as are needed and agreeing with the nature of the wood. If the wood is filled with roots and knots of a darker colour, the principal parties are first laid on with the paint required, afterwards the rest is covered with a more diluted paint; the whole as wet as possible, but not so much that the paint flows away. All this should be done in a free and easy manner, because else the grain might be loosened.

Then the glazing-brush is taken, from which the paint must be taken every time, and is held in the hand, as is shown in Engr. XXV, No. 1; this position is an easy one: with the tops of the fingers the top of brush can be governed in such a manner, that the dark or light tints can be easily regulated by more or less pressure.

In Parts I and III we have plainly described how to take away the paints, wherever it is needed, and the student knows that they depend upon the grain; but we intend to show in our Engraving how the brush must be held and how it must be turned.

If sides of wood or straight-grained wood has to be glazed, the paint can only be taken away with the entire breadth of the glazing-brush in those places, where the wood should have an even colour and no glittering. If the glittering is laid on with the entire brush, it will be as broad as the brush itself, see No. 1. It is better to get accustomed to work with the corner of the glazing-brush; see No. 2. The brush should be held in a slanting position and only the part *a b* should be used.

In this way by fits and starts the paint may be taken off in the direction required, as the different pictures No. 3 show.² When they are taken off by an undulating motion of the brush, the satiny shine, found in mahogany and other species of wood, will be obtained.

No. 4 is got by moving the brush in the opposite direction and working in the same manner.

If the grain has to be glazed according to No. 5, the brush is held in a direction contrary to that of the grain, and the dark and light tints are laid across, to be able to follow the curved lines. The part of the brush, marked *a b* is the only one used; it is turned to the right and to the left, in order to follow in broken lines the curves of the grain.

Just as, see No. 5, the brush has to be placed according to the grain, so it has to be turned according to the grain, see No. 6, in order to place the light tints in a slanting position; the strokes above the brush of No. 6 show the forms obtained by deviating touches of the brush, when the corner of it is turned with the tops of the fingers.

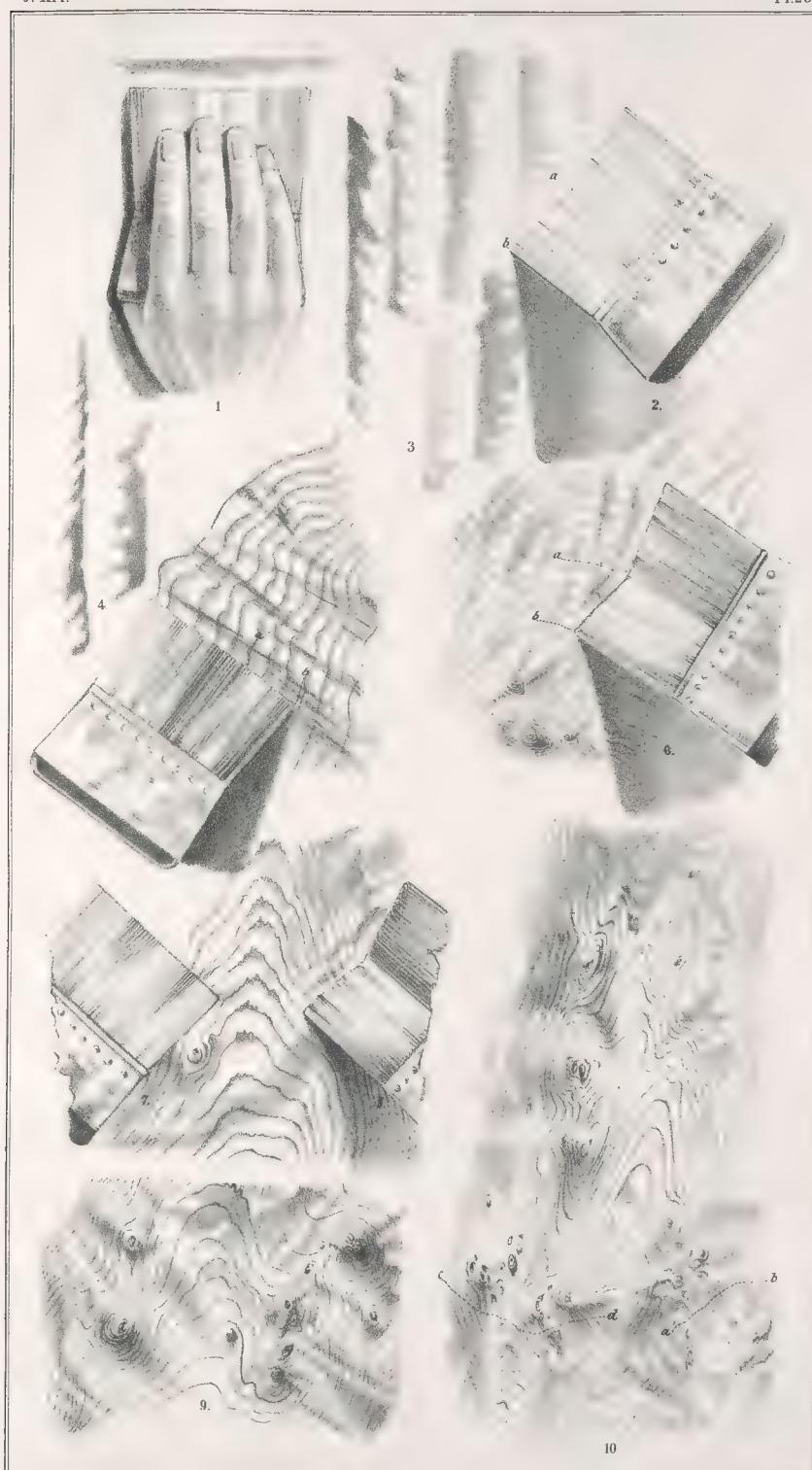
We think we have clearly shown how the brush has to be worked with, and we now call attention to No. 7 and 8; the left sides and the right ones of the wood or grain are united to the middle from which one has to work to the sides, or from the sides to the middle, just as the grain requires. No. 7 and 8 also show what we mean in No. 5 and 6 with the sides, the wood and the direction of the brush on either side of the middle.

One may easily see from this, that for straight-grained wood, and in many cases for the middle, the brush should be held flat, although the corner alone should be used, as the strokes must be varied according to circumstances.

No. 9 is a glazed rooty piece, which shows the different directions, occurring in it; on the left it is entirely according to the position of the brush given in No. 7, except on the rooty parts, where the light colours are lying in an angular form, and the corner of the brush has to be used in both directions. In the upper part of the right side of No. 9 the position of the brush is like that of No. 8, and in the lower part like that of No. 7. By this it is clearly shown, that the grain regulates the position of the brush, and that the roots, which have a circular grain, require the light from opposite directions.

The brushing away of the colours is one of the principal things, which is of too much importance to be slighted; even after having glazed according to the best rules, one may spoil the work with brushing away the colours.

If one can work quickly and has laid on the paint for glazing, filled up the spots where the light has to fall and









9e Afl.

Pl 27





also placed the half-dark colours, the whole would be spoilt by brushing it over crosswise with straight strokes, but by doing it in an undulating manner in the direction of the light spots, this may be easily prevented.

As the light spots depend upon the grain so the brushing over depends upon the colours laid on, and therefore it is always necessary to brush in the same direction as that, in which the colours are taken off with the glazing-brush.

By way of experiment, to see what the difference is between the various modes of brushing, one should do as follows: take the glazing-brush in the hand as in No. 1, make such forms, as are given above No. 1 and brush over these straight lines, with undulating, straight or slanting motions; one will then see, how much depends upon the proper method.

In the same way one might try No. 3, the position of the brush being as in No. 2, and one will soon find out, that by brushing over, with straight strokes, the figures become stiff and rectilineal, but that the undulating motion leaves a more natural form.

We once more advise, to brush over with an undulating motion in the direction, which the position of the light spots requires, because, even if every thing were done with the utmost care, the colours would be displaced and the whole would lose much of its naturalness.

We have shown the brushing in No. 10, and by brushing from *a* to *b* on the right, from *d* to *c* or from *c* to *d* on the left, and by following the course of the lines given, one will answer to what we think we have shown above.

It is the same with the pores of the wood; as soon as they are brought on in the size required, they are brushed up in the direction of the grain, just opposite to the direction which one should take when glazing; that is to say, following the lines of the grain.

Re-glazing, already treated before, although seldom done, because it does not pay well, is only then applied when the nature of the work makes it absolutely necessary.

There are some species of wood, which cannot be imitated without re-glazing. There are f. i. some species which have besides their natural colour a silvery shine, which is so strong, that to produce anything resembling it, the work has to be re-glazed.

We only name the poplar, the willow, the maple, the juniper etc.

Re-glazing requires little time, but quickness of working, and certainty in using the colours are requisite for succeeding. The paint must be sufficiently diluted and tried on the corner of the panel, then thinly and softly laid on and afterwards brushed over with the badger-brush, as it might else flow away in an irregular manner. With the otter's hair-brush the sharp light colours are laid on, in the middle on the knots and the places that glitter most, and then the colour taken away from the side of the wood partly and in a scarcely perceptible manner.

PROCESS OF WORKING ENGRAVINGS XXVI AND XXVII.

The priming for juniper is white Turkey red and a little ochre, which produce a faint rose-colour.

This priming is made free from curdling with a sponge filled with unburnt Sienna and lake; a little of this paint is left and the colour of Engr. XXVI is obtained; if required, the whole is brushed over with the badger-brush.

(In Engr. XXVI one can still see the marks of the sponge underneath the grain; the accurate lithographer has imitated them somewhat too accurately; a proof however, that the engravings are made with the utmost care even to the smallest particulars).

For sketching the grain the following colours are on the palette: Cassel Earth, burnt and unburnt Sienna and lake.

The tools required are, the flat-brush, the stiff-brush, the comb, the badger-brush and the wash-leather.

Next, the colour for the grain according to Engr. XXVI is made of burnt Sienna, lake and a little unburnt Sienna and Cassel Earth.

Then the flat-brush is taken and held as given in Engr. VII, No. 5, that is to say, it may be used entirely, to draw this fine well-filled grain. Care must be taken, to fill the brush a little more at the corner to make the principal vein a little coarser. We have already given in Part III what has to be observed with this sketching. One should fill the brush with a diluted paint and try to draw that fine grain, which is so requisite in this case. If the paint is too thick, it is difficult to work with, and if it is too diluted the grain becomes too thick. Such is also the case with filling the brush; if the brush is filled too much, the strokes become too heavy; if it is filled too little, it is more difficult to work with. Therefore the paint should be so diluted, that the grain can be painted quickly and without intermission. In order to obtain this more easily, the wash-leather is used; as soon as the brush is filled too much, it is pressed on the wash-leather, then pushed on the comb and when the paint is sufficiently diluted, the required thickness of the grain will be obtained. The thickness should be regulated by pressing the brush more or less.

We have already remarked in Parts I and III that the proper position of the brush is a principal thing when sketching the grain. Care should be taken, always to hold it horizontally according to the form of the middle part, by which means the lines at the sides flow together.

Engraving XXVI shows sufficiently, that this is necessary when sketching the grain; f. i. the sketch of the left side of Engr. XXVI, representing an oblong narrow grain, connected with the middle, could not be made, if the flat-brush were not held in the position required. The little knots are partly made with the stiff-brush and partly with the corner of the flat-brush. The sides are made with a larger brush, which may be twice as large as the flat-brush and prepared just like it.

As soon as one has got more practice, this brush may also be used for the middle, by which means one can work more quickly.

Next the pores are made in the sides with diluted paint; they are brushed over in a slanting direction, see Engr. XXV.

The colours for glazing are Cassel Earth, burnt Sienna, lake, a little unburnt Sienna; for the sides a little black is added.

One begins with making the colour of Cassel Earth, burnt Sienna, lake, and very little unburnt Sienna, which are laid on underneath the principal parties, in the darkest places; afterwards the rest is brushed over with the same colour in addition to a little more unburnt Sienna, and for the sides of a little black, in order to give that part a more greyish tint.

When the light colours are placed, the pores are impressed on the sides; this is done by softly pressing the badger-brush crosswise on the straight grain, so that the impressions of the hairs lie across the grain. They are then gently brushed away. When it is sufficiently dry the whole is re-glazed with black, lake and a little ultramarine blue. This paint must be so diluted as if it were water, according to what we stated above. The light colours are then laid on with the otter's hair-brush, as in Engr. XXVI, and, if necessary, these touches can be made sharper with the wash-leather on the tip of the finger.

The first coat of paint which is laid on, when glazing, is totally changed by this last transparent colour, which must be well remembered when laying the first coat. This however remains visible through the gray colour for re-glazing. The flowery spots in the middle are made with the otter's hair-brush, just as in Mahogany.

At the sides the gray colour is more even and soft and less deep than in the middle. This is obtained, by taking away the grey colour with the glazing brush, immediately after it has been laid on and then the whole is finished off in the manner described.

VERT DE MER.

This marble is one of the most beautiful of the dark species of marble; it is found, like many other species, at Carrara, in Italy, in the neighbourhood of which the so-called Vert d'Egypte is also found; a species which resembles the Vert de Mer very much, but does not possess such fresh colours. The ground is red with dark green transparent veins and spots, mixed with yellowish green ones and here and there greyish or white transparent ones.

It is difficult to find the reason, why this marble, originally found at Carrara, at the coast of Genoa, ever got the name of Egyptian. The only good one we can suggest is, that in early times a kind of marble was found in Egypt resembling this one; that kind was known by the name of Serpentin or Egypte-antique.

In our days also a kind of Serpentin is found in Germany, which must not be confounded with the first-mentioned; for, although the names are the same, their nature and colour differ so much, that the two cannot be compared with each other. There is a greater similarity between the Vert Levanto and the Vert d'Egypte, which however resemble each other more in colour than in the nature of their forms.

Vert de Mer has a black ground, through which a spotted and veiny tint of dark grey or yellowish dark green is running; across which others are visible of lighter hue, which form a thin texture, and which, in their turn, are crossed by broader and lighter tones that flow together with the principal white veins.

Vert de Mer is eminently fit for chimney-pieces, panels, columns and such like things; the finest pieces are used for ornaments, as clocks, vases and other objects.

Vert de Mer is a kind of marble that may be used with nearly all colours; with its dark, transparent colours it embellishes all those that are brought near to it and always takes a conspicuous place even among the finest decorations. When used out of doors, for fronts of houses, or for the fore-fronts of shops, it is found excellent. Great care must be taken of it, as it is soon spoiled by the air and rain; the colours fade and the fine texture of the veins is liable to come off.

EXPLANATION OF ENGRAVING XXVIII.

There are several species of marble, which are intersected by such an innumerable quantity of veins, that it would cost too much trouble to paint them with the brush. For that purpose the spotting-brush is used; it is filled with paint only at the top, after the hairs have been separated on the side of the palette or on the turpentine-cup. With the top of the brush the fine veins are carefully sketched, as given in No. 2, 3 and 4; they are made slanting and across the panel or rather they should intersect one another in all directions.

Brushes are sold, which are specially made for painting such marble; they have from 3 to 5 points, which makes it a great deal easier when one has to paint much, as those points always remain separated.

The process of working the marble, given in this part, is as follows:

With the spotting-brush or brush No. 7 the spotty parts are laid on, as shown in No. 5 and already mentioned in Part. II. Then the sable-brush, or, for larger works, the flat French brush is taken, and over the first sketch, in the way of marble-grain, see No. 11, (and the explanation in Parts II, IV and VII), the veins are laid.

We have already spoken of the filling of the brushes, so as to obtain different colours with one stroke. By first taking white, mixed with a little ochre and green of zinc, then a darker colour and so on, from *a* to *d* No. 11, a fine consecution of colours may be obtained in the brush, which will render the different colours in one stroke, and forms the consecution of colours on the panel.

As soon as the principal parties are sketched with the flat French brush, the finer veins are made. The greater part of these veins form a bundle and intersect one another continually; to render them easily and quickly, the brush must be taken at the lower end of the handle, the arm sketched and in that position the painter must work in all directions, see No. 6 and 8, where these strokes are given. When this is finished, other and still lighter parties are laid over them in an opposite direction. See No. 9 and 10 and Engr. XXIX.

PROCESS OF WORKING. ENGRAVINGS XXIX AND XXX.

Although this species has hardly any resemblance to the species mentioned before, the process of working is nearly similar.

The priming of Vert de Mer is black.

The palette is filled with white, black, ochre, green of zinc, ultramarine-blue and Prussian blue.

The black priming should be well dried before proceeding. The spotting-brush or brush No. 7 Engr. XXIX is filled, the hairs of the top are well separated, as shown in Engr. XXVIII, and the fine cross-veins are made with it, and in some parts the dots. It need not be said that this colour should be transparent, and that with this first sketch the whole should already be divided into parties.

Next, the flat French brush is taken to paint the first veins. For a work of small dimension the sable-brush may be used.

To paint those veins, the same colours as are mentioned above are used with a little more ultramarine blue and white; they are made in different tints, but with more yellowish green and of a lighter colour than the first sketch. The different colours not too much mixed on the palette, are successively taken up in the brush, f. i. the lightest colour first, then the darker ones and the darkest in the corner of the brush. As soon as one gets accustomed to taking up the different colours in this way, the process of working becomes simple and easy. Afterwards the fine veins are sketched with the sable-brush and joined to the broad ones. See Engr. XXVIII No. 6 and 8 and the explanation.

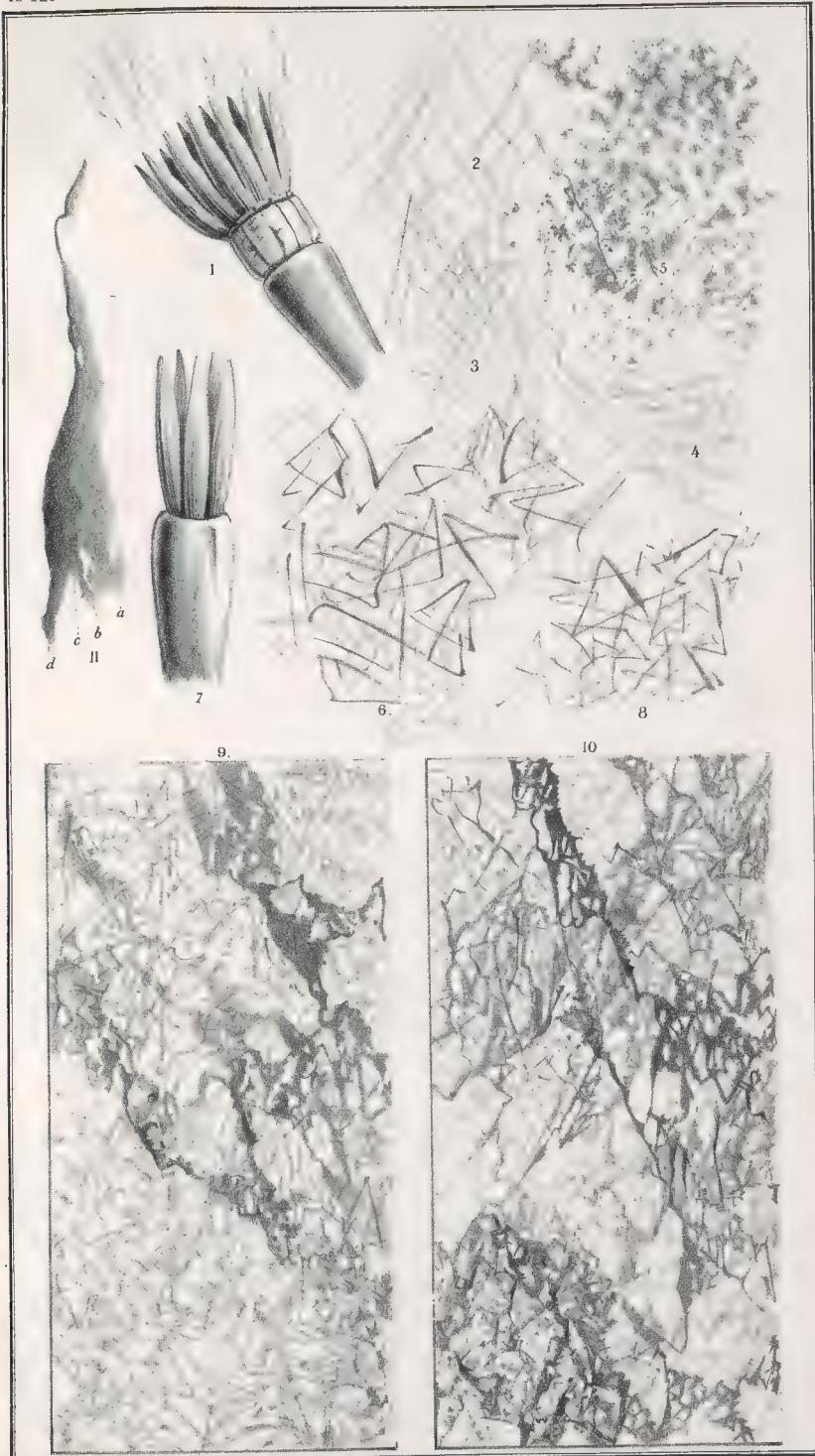
When this is done, the light parties are sketched in an opposite direction; their colour is a mixture of white, green of zinc, ultramarine blue and a little black. For some of the veins a little ochre and a little Prussian blue are added; the different colours are sufficiently distinguishable in Engr. XXIX.

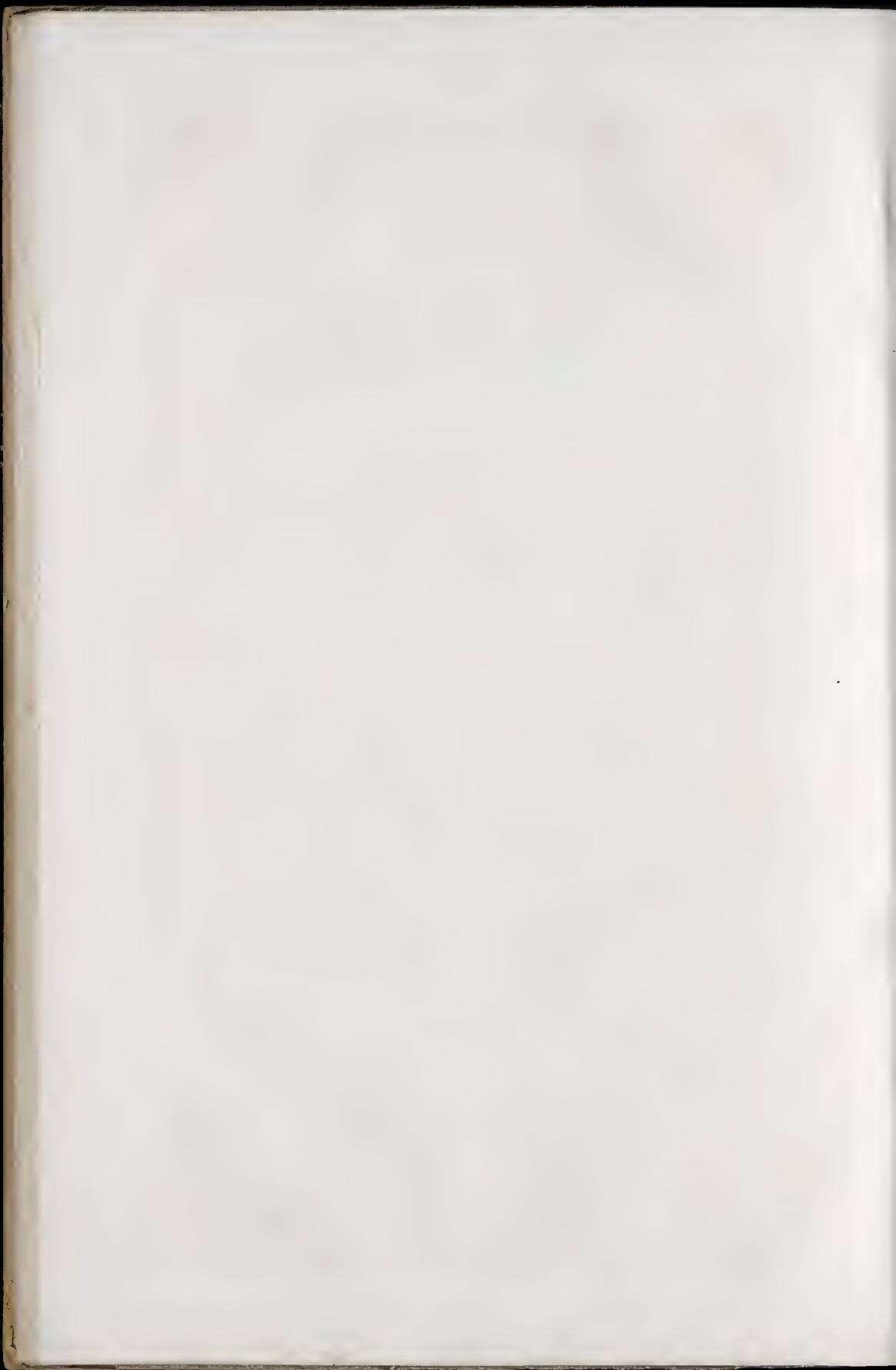
These light parties, as far as regards the veins, should be well marked, and then the last white veins are laid on. The whole is then softly brushed over with the badger-brush, but care must be taken not to make the veins lose any of their sharpness.

The spotting brush is again taken in hand with diluted black; the parties laid on are spotted over, so that the veins are broken by dark apertures, as is proper to this kind of marble, see Engr. XXIX. Then the whole is left to dry.

The glazing of Vert de Mer. For this purpose Cassel earth that has a golden hue, is used; one may also take common pitch, which is rubbed to a fine powder, and melted with raw linseed oil by a gentle heat, so that, when cold, it is fluent. It is afterwards diluted with turpentine and a siccative.

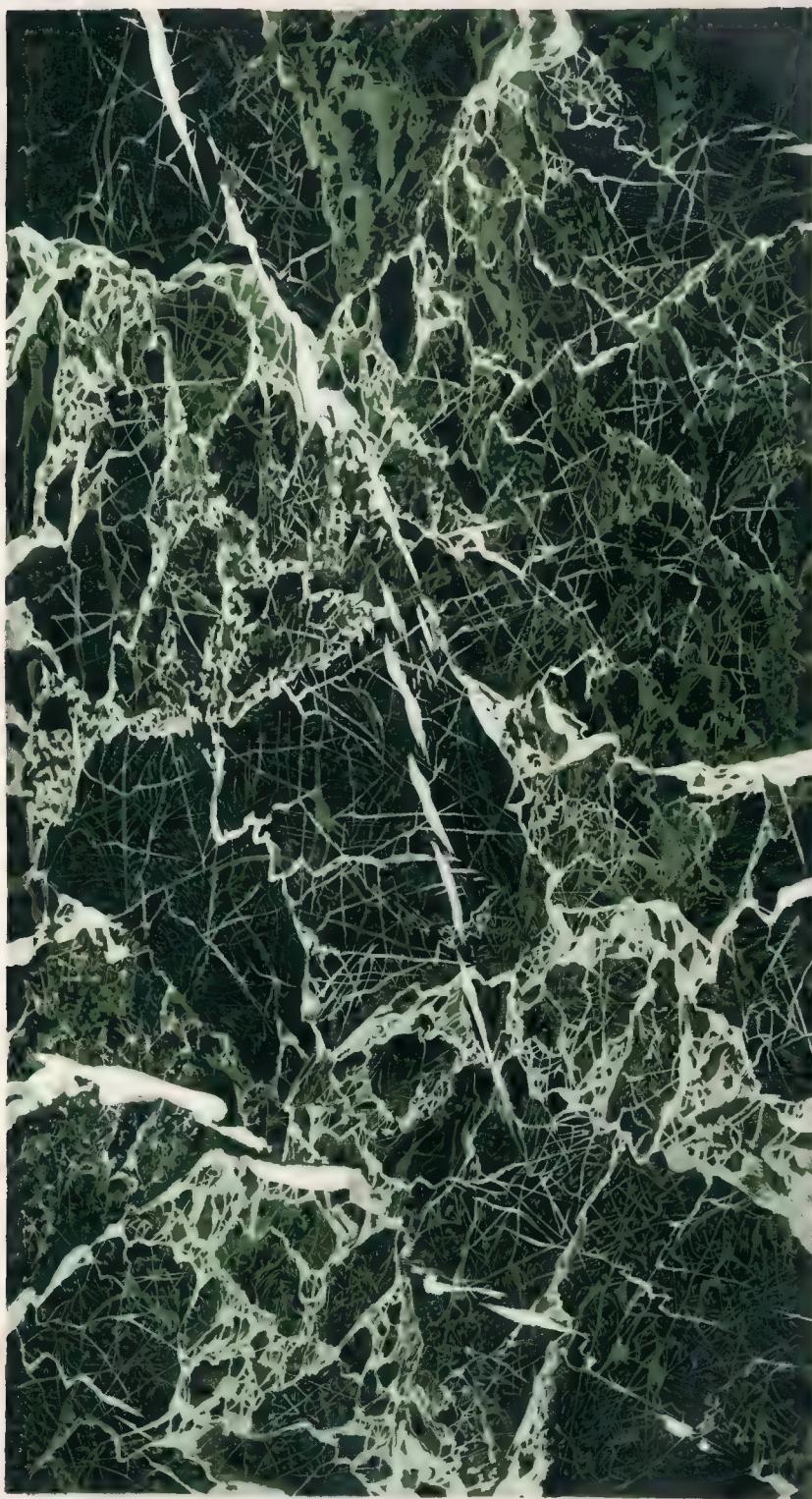
The palette is filled as before; a little chrome-yellow and the dissolved pitch or Cassel earth are added. The marble-glazing brush is taken and filled with turpentine, well mixed with a siccative to let the dissolved pitch dry, and the whole is glazed by parties with the pitch; then some Prussian blue is taken, in addition to a little black and ultramarine-blue, so that the colours required are obtained; see Engr. XXX. Next, the different colours, with which the veiny parties are sketched, are taken in the brush and the principal parties are touched up with them, but for some a little chrome-yellow is added. The white veins are now finished off with white and the whole gently brushed over with the badger-brush. The principal veins are touched up a little underneath with the marble-glazing brush, filled with diluted black and ultramarine blue, after which the spotting brush is filled with a very much diluted greenish black and the whole spotted over.





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PI. 29



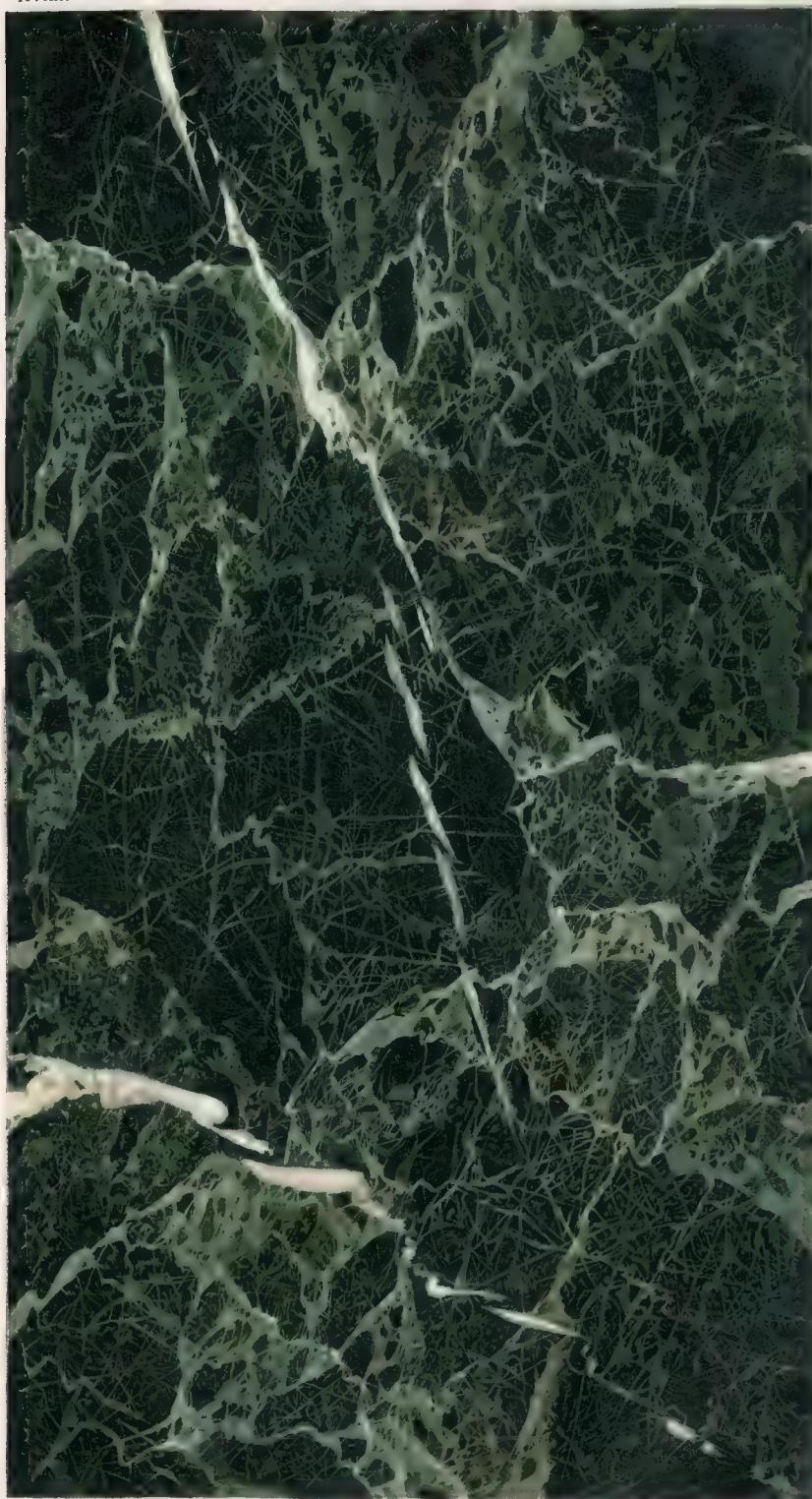
REBAND LITH. AMSTERDAM

P. D. B. inv. et del.



10⁶ AFL.

PI. 30.



AMAND GTH AMSTERDAM

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APPENDIX.

CONTINUATION.

Outdoor work requires as much care as indoor work. Though often used for embellishment, it ought to be regarded as a means to keep off the damp and to preserve the wood etc. in one word: as a coat which protects against the air and water.

The greatest trouble with outdoor work is the blistering and cracking of the varnishes, which are caused by different things: as, the fatty or watery substances, contained in the wood and drawn up by the sun; fatty or soft coats of paint on a hard ground, which are covered with another that is laid on too soon, always produce blisters under the last coat of paint with a strong heat of the sun. One can easily find the cause of these blisters by breaking them; in one case they will be found full of water, in the other they are filled with air or gas.

The varnish itself often is the cause of the cracking, as it is often not fit for the purpose for which it is sold; but a good varnish on the contrary may be misapplied. When the priming is too fatty or too oily, it will always shrink or expand through the influence of the air. The varnish also does that, but when the paint is fatter or oilier than the varnish, the latter must break at last. It is therefore of great importance to make the priming always thin. If wood, especially oak or deal, are covered with a coat of paint mixed with nothing but boiled oil, experience teaches us, that the results will be bad; and this will also be the case when the different coats of paint are too fatty and too new.

We always had good results, when we primed doors with brown ochre, mixed with raw linseed-oil and turpentine, which was afterwards smoothed with water and fine pumice.

It is better to burn off the paint when blistered than to use lye; by the former more fat and moisture is taken away. For frames and carvings etc. it is better to dissolve the paint with lye. In the first case one tries to burn the paint and scrape it off, when soft, with a blunt scraper, but at the same time care should be taken not to injure the wood; in the second case the work is covered with lye whose lees are very strong. The paint is then softened and rubbed off with warm water. The lye should be carefully removed from the wood, by rubbing it with chalk, and taking it off when dry, and by repeating this so often till the lye is removed; with water and $\frac{1}{4}$ of vitriol one gets the same results. Then the wood is left to dry as much as possible before it is painted again.

With all kinds of work it is a requisite to remove the loose paint or blisters, to paint it over again etc.; some times however one finds the old and even loose paint not sufficiently removed from the panes of windows. It is thus advisable to do this with a sharp knife or chisel and to fill up the openings with putty, before the new coats of paint are laid on, by which means one avoids seeing broad rims of paint on the glass. The common priming should not be too fatty from too much boiled oil and the last coat of paint should be mixed with some standoil. This paint should not be too much diluted and be equally distributed over the whole work, else the paint will get full of wrinkles or shrink with warm weather.

The paint mixed with standoil should be old paint; if it consists of linseed-oil zinc-white with $\frac{1}{4}$ of standoil for every pound of paint, or zinc-paint of $\frac{1}{2}$ of standoil and $\frac{1}{2}$ of turpentine, it is useful to prepare a good quantity before-hand which may be used when wanted and one will find by experience that this is of great importance even when the paint is a year old, for it keeps a better shine. To let it dry better a few drops of siccative might be added.

For fine work the last coat of paint should be zinc-white well diluted with turpentine, and every coat of paint should be carefully rubbed with sandpaper and kept clean and free from dust.

This is also the case with the porcelain-paints; the whole should be well cleansed, rubbed and dusted. Often the sandiness,

roughness etc. of the lackerings cannot be accounted for, but then only, when the priming is well rubbed off and entirely free from dust when the wood is well soaked through with paint, one shall avoid it. Of no less importance this is with the laying on of putty; for fine work a thin and even layer of putty is necessary for making it entirely smooth. The putty must be painted without blisters; the priming should be well brushed with the badger-brush. Porcelain-paint is thus prepared: the zinc-white well ground as before, $\frac{1}{2}$ of standoil and $\frac{1}{2}$ of turpentine; for work that is less exposed to the sun, to every pound of the zinc-white mentioned $\frac{1}{4}$ of standoil and $\frac{1}{4}$ of porcelain-paint are added, the whole made thick as varnish should be and used with a soft brush or one that is a little worn already.

For the last coat of lacquer, that may be laid on the next day, to every pound of zinc-white $\frac{1}{4}$ of standoil and $\frac{1}{4}$ of porcelain-paint are added which is also brought to the thickness required.

The first coat of lacquer as well as the last should be laid on quickly, even and not too thin, so that the work does not become streaky; the lacquer should flow well as is the case with varnish. Just as when varnishing, the last coat should be brushed over softly.

For work that is much exposed to the sun, as thresholds, blinds, etc., as priming to every pound of zinc-white $\frac{1}{4}$ of standoil and $\frac{1}{4}$ of porcelain-paint are added; and for the last lacquer $\frac{1}{4}$ of standoil and $\frac{1}{4}$ of porcelain-paint to every pound, which is prepared in the same way as is mentioned before; this paint does not grow yellow and shines well, but in places where there is little light it grows sooner yellow than the paint we have described above. It should be made a little thicker however and a little siccative should be mixed with it, except when it is prepared some time before, for then it dries quickly enough.

This paint might also be laid on only once, but then it must be laid on as thick as possible with stiff brushes.

With porcelain-paint, that must be laid on twice, one uses the brushes commonly used for varnishing; care should be taken that the brushes should be clean; when painting panels and frames for pilasters other brushes may be used.

Painters often are troubled by the sticking of lac-dyes, for shelves, etc.; standoil-paint (when well prepared) always dries well. But when such things have to be painted white or light grey, it does become yellow. Experience teaches us, that by mixing a little white limestone or shell-lac with the porcelain-paint it dries well without sticking afterwards. It is however much more simple to make the whole without shine or at least the shelves at the top.

To prevent the sticking one must mix $\frac{1}{2}$ of the white of eggs with $\frac{1}{2}$ of water and lay on a thin coat of it with a soft sponge or brush and the shine will not be hurt. One should not mix more white of eggs with the water, for then the paint would burst.

These paints mentioned all keep their shine and can be well cleansed. This is done with coldwater and white soap, laid on with a soft sponge; next the soapsuds are taken off with a wet sponge and then the whole gently rubbed over with a piece of wash-leather. Porcelain-paint does not stand soap so well as standoil-paint; therefore not too much soap should be used.

The priming and varnishing of different species of wood and marble. The priming and varnishing is corresponding what we have just treated of. The priming for wood-painting should not be entirely dull, but have a little shine which is obtained by diluting the paint partly with oil and partly with turpentine. If the priming is too dull, it is not easy to work upon, because little pieces of the sponge are lost in making the panel free from curdling, the brushes do not work well and the first sketch does not stick. We give moreover the advice not to wait too long after the priming, because the priming, when a few weeks old, does not take any colour and the painter must be

very clever, not to loosen the veins when glazing for oak, which is generally painted with oil-paint the priming should be very dry, so that it is not hurt by the leather combs etc.

The priming for wood-painting should always be light; the painter can always make the wood dark enough and he may depend upon it, that in course of time both priming and varnish make the colours grow darker and often even darker than nature gives them.

The priming for marble-painting should be thin and mixed with more turpentine; a dull priming is better than a shiny one to work upon.

Varnishing wood is of daily occurrence; but when a work has to be glazed twice, one is apt to mix or to hurt the colours.

The varnish, therefore, should never be too much diluted; when there is too much turpentine in it, the colours get mixed because the water-colour, which is dry, at once mixes with the thin varnish and would be displaced by the brush. The varnish should have the common thickness and be equally distributed, gently and without using the upper part of the brush.

(Every varnisher should always remember, never to use the

upper part of the brush, because his work would become coarse.)

After having placed the first coat of varnish one should wait two or three days before finishing off. It would be still better to wait two or three months because the lacquer would keep its shine much better.

The varnishing for marble-painting differs from that of wood-painting. The species of wood, with few exceptions, are yellow or with a yellow ground; the polish of the upholsterer gives the wood a yellow colour. White species of wood, as maple, silverwood etc. are varnished with a white polish. The different species of marble, although many of a dark hue, generally have white veins or spots, which would be damaged by varnishing the best way, therefore, is to use a lacquer made of white limestone. By polishing a work smooth, even when the varnish is taken off in some places, it is not hurt; a thin coat of varnish is laid on again and thus the marble obtains a sufficient shine.

For chimney-pieces and such like things, that must bear objects of different weight, varnish, as white as possible and made with copal, must be used. Often fine work is spoiled by an improper varnish.

(*To be continued.*)

OAK.

Till now we have described and treated of some of the principal species of wood, and so it is the turn of the oak, which has always been celebrated as the king of the forests.

The history of the first centuries already makes the impression upon us, that the oak was very much distinguished and respected. We read f. i. in the Bible, that Deborah, the nurse of Rebecca, was interred at the foot of an oak. Ezekiel mentions, that the idols were worshipped under oaks. By the ancient Greeks and Romans this tree was considered as holy. Being consecrated to Jupiter its violation was punished with death. The crown of oak leaves was a symbol of power and strength, not only, as far as regards warfare, but also a sign of excellence in sciences or arts and was bestowed upon the conqueror in the field and upon the conqueror in the contests of the good and noble. This symbol has retained its full significance up to this day.

The Northern peoples, as well as the Germans and Gauls, regarded the oak with a holy respect and most of the European nations sacrificed to their gods under the shadow of the oak. There the most important affairs were discussed and the rustling of its leaves, at certain moments, was considered as a good omen.

By numerous other particulars we could show, that the oak has exercised a greater influence upon the spirit of former ages, than any other tree.

The oak requires many years before it is fully developed and 150 to 200 years are generally considered necessary to give it a middling height. As proofs, that this tree can reach an enormous age and circumference we give the following examples: An oak in the vicinity of Saintes, at Montravail, shows by its annual rings an age of 2000 years, with a circumference of from 8 to 9 mètres; another of that size and age in France is found near Varzay and Doui, whilst at Allowville in Normandy one is found with a circumference of 11 mètres; in 1696 a little chapel was built in it. Its age is calculated at from 800 to 900 years. In Yorkshire, near Ripon, at Fountains Abbey, an oak, 1200 years old, is found; in Surrey, in the Cromhurst churchyard, one of 1450 years; at Tortingall, Pertsshire, one from 2500—3000 years; in the Brabourn churchyard, Kent, one of 3000 years; at Hedsor, Bucks, still an oak stands, which with a diameter of 27 feet has reached an age of 3200 years. At Pleischwitz, in Silesia, an oak is found, which is considered to have reached an age of 2000 years. The different descriptions of the celebrated Upstal-tree, near Aurich in East-Frisia and of the ancient oak of the Frisians, consecrated to Thor, are well known, especially the latter, because of its being felled by Boniface. Mention is also made of an oak-tree near Basle, whose branches had a length of 100 paces and of three oaks, called the three brothers, near Cumberland, the smallest of which had a circumference of 40 feet.

By these statements we think we have shown sufficiently what a great age the oak can reach and how large its circumference can grow. The age of from 90 to 200 years seems to be the fittest for felling. After the age of 200 the wood does not grow stronger nor better, although it remains useful. As an important example of this we read, that in the county of Monmouth, one day an old oak was sold, for the immense sum of £ 870, viz. the bark for £ 200 and the wood for £ 670.

The different species of oak are so numerous, that it would take too much place to enumerate them; a century ago only a score of different species were known, but their number has mounted to more than 200: except those that deviate from those species and cannot be considered as new species. North America produces 134 different kinds, France 37, England 100 etc., but to enumerate them all would be useless. We will only state that all those species have a height of more than 30 feet, but $\frac{2}{3}$ of them are not fit for building or any other kind of carpentry.

We rather fix the attention upon the summer- and the winter-oak, which are distinguished by this, that the summer-oak buds earlier than the winter-oak, that its fruits and leaves have longer stems and that it is entirely leafless in winter. The winter-oak has short stemmed fruits, and retains its leaves, though sere, all through the winter, till the new ones bud out in spring. These species fill the Norwegian and German forests; the wood of both species is heavy and firm, the bark produces excellent tan for hides etc.; the fruits are used for fattening pigs etc. The cork-tree, also a species of oak, grows in Southern France, Italy, along the coast of the Mediterranean, Portugal, but most of all in Spain. The well known bark is taken off every 3 or 6 years and then it begins to grow again.

The oaks, especially in the East, produce the oak-apples of which our ink is made. The oak-apple is formed by a kind of insect, which puts its sting into the leaves and there lays its eggs, so that a little bladder is formed from which the young animal creeps out through a little hole and leaves the useful oak-apple.

The oak should be felled at a certain time and under favourable circumstances. It is better to fell it in winter; wood, cut down during full moon, does not dry easily and bursts sooner. The reason of this is, that trees draw up the saps when the moon increases; when she is in the wane, the saps subside gradually to the roots, the wood is closer, dries sooner and is more durable.

Oak, used by the upholsterer belongs to the finest species. The trees, destined to that purpose, are peeled, cleft into four parts and then dried, sawn and prepared for further use. Oak destined for shipwrights or others, is of a coarser grain and imported in the shape of beams of different dimensions. It makes a great difference to the painter what kind of work he will paint as oak and what sort of oak he will reproduce. For pieces of furniture, doors and such things, he should paint oak of a fine grain and the halves of the interior parts.

EXPLANATION OF ENGRAVING XXXI.

Oak-painting, according to Engr. XXXII and XXXIII, is done with oil-paint; the pores are made with a leather or gutta-percha comb. The leather, that is most fit for this work, is that used for saddles, which should be smooth on both sides, and somewhat supple and elastic. A piece of stiff gutta-percha may be used as well, but this should be a little thinner.

The leather is prepared in the following manner; it is first softened in water and then beaten with a flat hammer, till it is everywhere of the same stiffness and hardness. The best way is to trust it to a good shoemaker. Next, the leather is cut into pieces of 8 centimeters by 10, or into such, as are thought to be fittest for the work to be done. When it is well dried, the combs, as given in No. 1, 2 and 3, are cut with a sharp knife. The teeth of the combs are represented in their natural size. The openings between the teeth should correspond to the thickness of the grain of the oak and therefore it is requisite to pay attention to it with fine combs.

The cutting of these combs requires a little practice, but is soon mastered. The leather is placed on a table and held with the forefinger and the thumb in such a way, that both the length of the teeth and the incisions of the knife may be regulated; see No. 7. The rough side of the leather should always be turned upwards and the cutting be done by pushing the knife forward, by which means the threads of the leather are cut off even and fine points are formed.

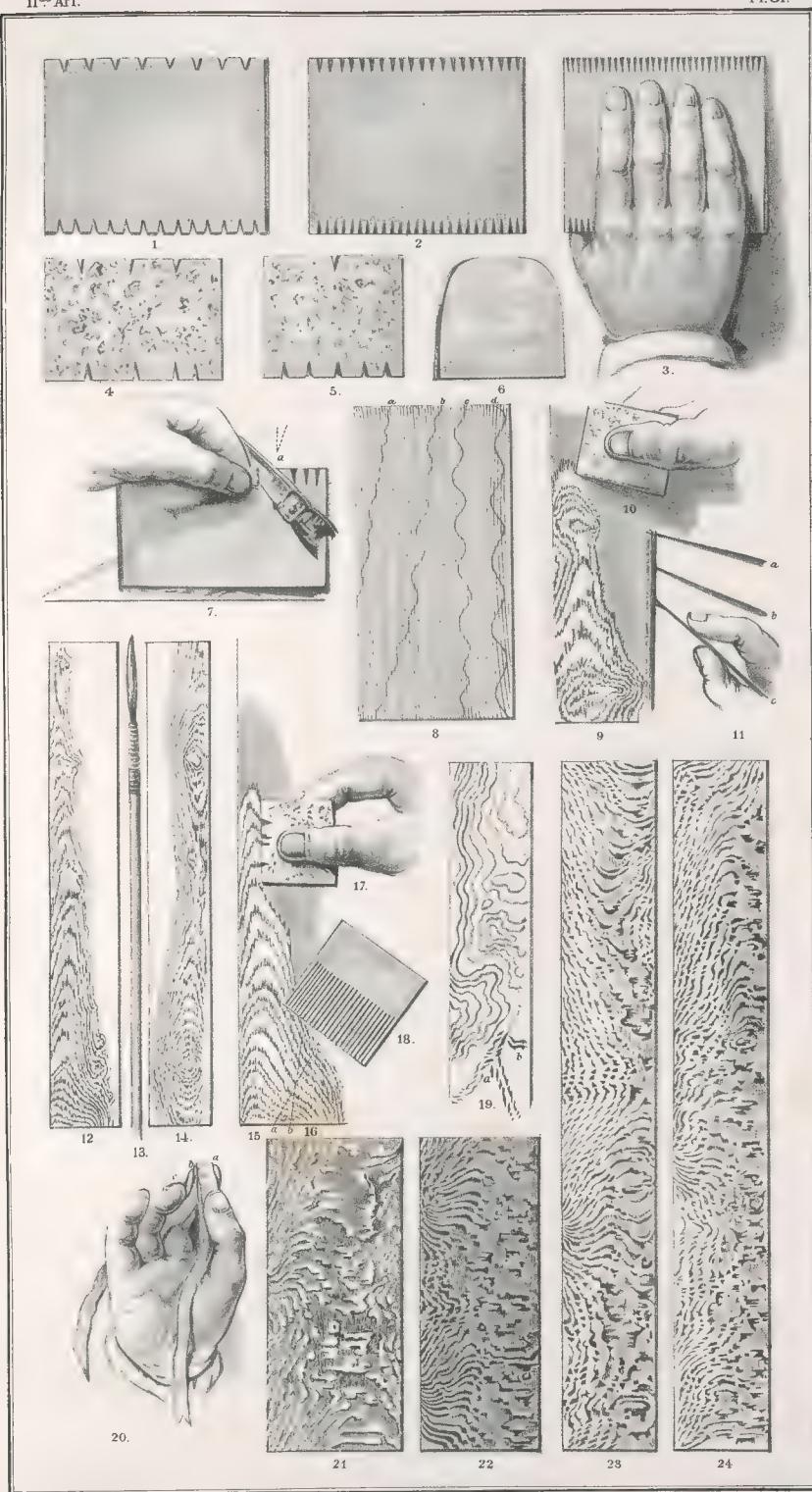
The combing of oak is simple and easy. As with all kinds of wood, the broadest grain lies near the heart and becomes gradually finer. As soon as the paint is laid on, first the comb No. 1, is taken in the hand as No. 3 shows, so that one can give an equal pressure everywhere with the tops of the fingers. If the dimension of the work requires it, the broadest grain must be combed with the broadest comb, and afterwards the finer one is taken, No. 2. One should always comb a little over the grain which is already made, so as to get a gradual change. Going on in this way till the finest comb has been used, one may, by holding it in a slanting position, make coarse or fine strokes, just as with the stiff brush; see Engr. I, No. 16. Then the finest comb, No. 3, is taken, to comb it all over, which is done in the following manner; No. 8 shows the consecutive lines of the grain and changes from the fine ones *a* to the coarse ones *d*. The coarse grain is combed over with a fine comb in a long undulating motion; next the finer part *c* is made, with shorter motions and so on to letter *a* with shorter and stiffer motion in a slanting direction; see the lines *a* and *b*, by which process the moire grain is obtained, which is proper to oak. The combs should not be pressed too much, because they would suffer too much then. No. 11 shows the horizontal position of the comb; the panel and the comb are seen from aside. When one has newly cut combs, and they are pure and sharp, the position, letter *c*, must be considered as the proper one; as soon as the comb is used a short time, one changes the position to that of *b* and next to that of *a*, and so one always obtains sharp work, which should be always observed when one combs over with the finest combs. The paint should be removed with a piece of cloth after every stroke of the comb.

If one wishes to paint a panel with a middle-piece, first of all that part is sketched, where one wishes to place it, next a piece of cork is taken and the middle piece made with it. In many cases the core of oak is irregular and indented; No. 9, 12 and 14 show this. No. 10 shows the moving of the cork. With the corner of it an up-and-downward motion is made and the paint displaced in such a manner as to form the grain required. This grain may also be made in a simpler way, but it then becomes more regular. Combs are made of cork soles in the form of No. 4 and 5; their teeth should be broad and sometimes irregular as the work requires. No. 15 shows a grain formed in that manner. One pushes the cork comb, in a vertical position, and makes the ends of the fibres indented, by an up-and-downward motion; the broad part of the middle-piece, Engr. XXXIII, is combed in that way, (see No. 17, Engr. XXXI, which shows the position of the cork) and the grain is afterwards combed over with a fine steel comb.

This combing is done with the corner of the steel comb, see No. 18. First the combing is done in the direction of line *a* then in that of *b* so that the grain is broken crosswise.

The grain of the core is also made with a brush of long sow's-hair, see No. 13; the grain is sketched in the usual way, and then combed over with a steel comb in the manner described. As soon as this is done the glittering of the oak is to be made. This requires study and practice. Though a pupil can learn to paint all sorts of wood within three months, the glittering of the oak requires all the time he has to his disposition, because this kind of wood would else be the worst, he would imitate.

We have given some copies, No. 21—24, fit for practice.





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PL.32









If one wishes to make it easy and at the same time form regular parties, one should think of a straight grain, which although varying from the ordinary one, nevertheless forms connecting lines. In No. 19 we have shown, what we mean by this. Those lines follow one another regularly and nevertheless form the same thing as given in No. 21—24, with this difference however, that in No. 19 all the lines are connected and in No. 21—24 not. If one wishes to make glittering parties of oak, one should imagine a party, whose lines are unconnected. The cross lines form the principal party and become thicker and heavier; the vertical lines form the sides, which grow thinner and thinner the more they approach the outsides. When the parties are sketched in this way, one shall never make anything unnatural, as No. *a* and *b* show, which lie across each other, so that one line intersects the other and uncouth parties are formed.

There are several ways of making these glittering parties, but they are all the same, if the result is only a good one.

Some people use strokes of cloth, others washeather; some put the cloth on a round piece of leather or on the thumb, others on the top of the forefinger; on the thumb the material is held between finger and thumb, and the nail of the thumb is used for moving the paint, whilst the end is held with the other hand and the material is pulled away a little after every stroke, in order always to wipe with a clean piece of the cloth; this is also the case with leather.

The top of the forefinger is most recommendable, though not so easy as the way just mentioned. The piece of cloth is laid over the forefinger, see No. 20, letter *a*; it is held with the thumb and the middle fingers *b* and *c*. Finger *b* is placed behind the forefinger *a* whilst finger *c* is pressed to hold the cloth.

When making the glittering in this way, the piece of cloth is constantly moved a little and pulled between the fingers *b* and *c*, by bending them. Thus always a clean piece of the cloth is ready for wiping; and it is just as easy to work with the forefinger as with the brush.

Some people do it with a piece of gutta-percha or saddle-leather, which is cut in the form of No. 6, and which wipes very well; afterwards it is gently combed with a steel comb. Though this way is much easier, it has the disadvantage of giving a sharp and dark side to the glittering; as for us we consider it best, to use the stroke of cloth.

PROCESS OF WORKING ENGRAVINGS XXXII AND XXXIII.

Oak is one of the kinds of wood, which are most often imitated.

Generally, especially for common work it is done with water or beer, and we do not think it superfluous to describe that process.

The priming for oak depends upon the age and is therefore regulated according to circumstances; new oak is reddish yellow, which changes into gray. Old oak, which has been long exposed to the influence of light and dust, has grown blackish gray.

The priming is made of white, ochre and a little Turkey red; also of white and a little chrome-orange. When it is of a darker colour a little more ochre and Turkey red are used and less white. Next it is varied by adding a little brown ochre, for old oak burnt umber, and for very dark oak a little black. Care should be taken, not to make the priming too dark, as the varnish and paint grow dark in course of time.

The water-colours for oak are mixed of burnt and unburnt Sienna and Cassel Earth. The darkness of it is regulated according to circumstances, by adding a little more Cassel Earth, and for old oak by adding burnt umber and black.

The water-colour should never have too much yellow, but requires a reddish hue; even new unpainted oak is not so yellow as it is often painted, but generally has a greyish hue. When the water-colour has the hue required, it is laid on, but care should be taken to make the sides and corners everywhere alike; then it is spotted with the spotting-brush and combed over with the steel comb. Where the middle-piece is going to be placed, the paint should be kept a little lighter; the middle-piece is made with the stiff-brush or brush, No. 13, Engr. XXXI, and well brushed over with the badger-brush, so that an indented grain is obtained. It is the same whether one brushes upwards or downwards. As soon as it is dry, a brush is taken filled with soapsuds and a little paint, and the glittering is made; with a wet sponge the figures are taken away, the water-colour is dissolved then and the glittering becomes visible. After this, a half tint is removed with a piece of half dry wash-leather, so that the glittering has a dark side. The glittering is glazed with light colours and afterwards touched up with a half tint, so that a light side at the top remains. Next with the grain-drawer, filled with black and oak-colour, a light grain is drawn over the sides of the glittering etc.

Beer is also often used and recommendable. By using beer, the glittering can be made, even when the work has become dry, then the half tints of the glittering are laid on and the grain drawn over it. By covering the middle-piece with water on the first coat the beer is diluted and the grain becomes sharper and more dentate. Oak when watered can be more easily glazed, which should be done by touching when beer is used. By adding flour or starch to the beer, dentate oak can be made, as well as with oil-paint; but one should be extremely quick when laying on the glittering. It cannot be glazed and it is absolutely requisite, that the work should be extremely smooth, which is else less necessary.

Oak-painting in oil-colour is however to be preferred to all other manners; first of all, it is easier, and secondly, which is the principal thing here, it approaches nature much better in all respects, especially, as far as regards the grain.

The common mixture for oak-painting consists of raw linseed-oil and turpentine in addition to a little diluted yellow wax and some washed chalk; afterwards the colours required, rubbed in oil, are added. A little siccative is necessary to let it dry well.

To prepare the mixture for obtaining a sharp grain, raw linseed-oil is taken and the same quantity of soapsuds is added, strong enough to mix with the oil; to 1 pound of this mixture $\frac{1}{2}$ of diluted yellow wax and $\frac{1}{2}$ of siccative is added. Next the whole is rubbed in oil with the colours and done in a paintpot by parts. The paints are often dissolved by the soapsuds, but when mixed in this manner, the whole remains united. Turpentine is added afterwards. For indoor-work more turpentine will be wanted than for outdoor work; at all events any one will soon find out how much turpentine his work requires. The thinner this mixture is, the better the grain; as soon as one sees that the comb does not take the paint away, too much turpentine is used: generally $\frac{1}{2}$ of turpentine to 1 pound is sufficient.

The colours are the same as for oak in watercolours; they are burnt umber or unburnt Sienna, burnt Sienna and Cassel Earth. For light oak a mixture of white and chrome-orange makes a good priming; the rest as is given above.

This oil-mixture is laid on equally everywhere and first the middle-piece is made, the work is combed over with the leather combs, in such a way, that one passes from the thicker grain to the finer ones. Next it is combed over with deviating motions, the middle piece with the steel comb, and the glittering is made (see explanation of Engr. XXXI.)

It was formerly the custom and it is done even nowadays, partly to take away the pores where the glittering was, in order to give a dark side to the light glittering. Nature however shows us not only a dark side to the light glittering, but also the pores with the glittering. It is impossible to wipe them half away and keep them sharp. In vain were the trials with a little comb made for the purpose or with chips of oak. It is therefore necessary to leave the pores, and, when they are well dried, to glaze them entirely with water or oil-paint, made of burnt Sienna, unburnt Sienna and Cassel Earth. When this glazing is dried up, it is half taken off with the wash-leather, so that a dark side to the light glittering remains. The light sides of the glittering are made and if the dark side should require a little more force, it must be touched up with a flat French brush, filled with the glazing-colour.

The glazing of the middle-piece is done in the same way as other kinds of wood, but it is more even of colour; the light falls upon the turnings of the grain or on the knots. Next a little black and Cassel Earth is taken and a thin streaky glazing is laid over the whole; that on the glittering is combed over with a fine comb. Afterwards the middle piece is spotted a little, which spots are brushed upwards.

The dark glittering is sketched with a short brush or flat French brush; the dark side of the light glittering is the light one of the dark glittering. For that reason the dark glittering is made when the paint is still wet, a light side is wiped off and glazed as before, without taking away the colour of the glittering.

Old oak is treated in the same way; the priming however is darker. The paint consists of burnt umber and black; a little more Cassel Earth and black may be added to the oil-mixture. The glazing-colour is made of burnt Sienna, Cassel Earth and black, or only of Cassel Earth and black, which is regulated according to the age of the oak, one wishes to represent.

When painting oak, the following things should be observed; oak should be painted of an even colour, because it has a straight grain and only on middle-pieces or curved lines light may fall; not too much glittering should be made in oak; the middle piece should only be painted half because the oak destined for furniture, generally called wainscot, is always split into four parts. If the work requires the painting of entire pieces of oak, as f. i. large doors of churches or stables etc. one may paint it according to one's fancy. In that case the glittering may also be made larger and stronger, as that wood has always reached a high age, before it is felled. To common doors, furniture etc. this latter way cannot be applied. Oak is rendered most according to nature, when the well-combed grain has an even colour and is not too undulating.

WAULSORT MARBLE.

Waulsort Marble has received its name from the place, where it is found, namely Waulsort, in the province of Namur (Belgium), a small village, only counting 250 inhabitants. This marble differs in many respects from the species we have treated; it also has the one quality which was wanted to make our work complete.

In other species of marble we have described the different characteristics. There are different species of marble composed of fragments of various colours and irregular shape. So f. i. Brèche d'or, Brèche d'Alep, Brèche douaire, Waulsort, Vert antique and many others are formed under the same circumstances. Many of our readers probably have often seen these species and found different pieces in them, which, though varying in size, agreed so much in colour, vein and character, that they must have drawn the conclusion that they saw fragments of one whole. Often in a pretty large piece such lumps will be found, which would fit exactly to one another.

From this we get more and more convinced, that these species of marble have undergone different formations, and that the different fragments show the first or second layer, which broken by falls or crumbled to dust, again became a solid mass, when mixed with other substances. We remarked before, that Waulsort is found in different species; it also changes its name according to the various colours. So we know the gray Waulsort, which changes from a light colour to a dark grayish one. The lightest kind is often filled with large light and white spots, sharply marked against the dark and black ones. The dark grey Waulsort is less sharply marked and differs little from the violet Waulsort; their natures are the same. The colours only make them change their names. The ground of this species is dark grey and grayish violet; the pieces of various colours generally have a grayish hue, corresponding to that of the ground though always lighter or darker. Although the black, light and variegated fragments are sharply marked, the whole is more uniform and agreeable in colour than the fore-mentioned light gray Waulsort. The brown Waulsort changes from yellowish brown to red and resembles the violet sorts very much.

By the ground of Waulsort marble is meant the colour between the fragments, which are filled with fine grit; this fine grit consists of smaller or larger pieces principally broken off from the larger ones and therefore has a hue corresponding with it.

The fragments are found of the following colours: milk-white, yellow, reddish, gray changing to black. These fragments are sometimes crossed by veins, generally white but sometimes dark. The fragments themselves are generally sharp-pointed.

EXPLANATION OF ENGRAVING XXXIV.

To paint marble with the different layers of fragments forming good parties and the fragments themselves having an irregular but elegant shape is not very easy, if one does not know the rules by which to work. We believe that the following explanation will make the painter succeed.

The priming is made very light; next the great flat French brush is taken. For large work one may take a common but well used paint brush, and the parties are sketched in the colours required, by means of the marble grain which we have described before. Engr. XXXIV No. 1 shows the different parties.

The openings thus obtained give an irregular party of lumps, which, with a bold and broad marble grain, is always of a good form and position. If one wishes those parties a little strewn, they are touched up irregularly with the same colour. This being done the parties are spotted over, see No. 2, trying at the same time to keep the opening clear, which may be done by using the corner of the brush. Next the fragments are filled up with the flat French brush or the marble-glazing-brush, see No. 3, after which the sable brush is used for sketching the veins between the fragments, and when the whole is dry, it is glazed, see No. 4, Engr. XXXV and XXXVI.

PROCESS OF WORKING.
ENGRAVINGS XXXV AND XXXVI.

The priming for Waulsort marble consists of the following colours: white, black, ochre; for violet Waulsort a little red mortuum caput is added. This colour should not be too dark; see the gray priming Engr. XXXV.

The palette is filled with white, black and ultramarine blue, ochre, chrome-orange, Turkey red and red mortuum caput.

When the priming is dry, a thin gray tint is laid on, consisting of white, black, ultramarine blue, ochre, Turkey red or for violet Waulsort, red mortuum caput; these colours are blended, according to the placing of the parties.

Next the great flat French brush is taken and a thin mixture made of black ochre, chrome-orange and a little Turkey red, with which the parties are laid on by means of the marble-grain which varies from broad to thin. The parties, which need not be filled up with lumps, but should be kept even, must be irregularly covered with this mixture, but so that they are transparent.

Next, the spotting brush is taken, filled with ochre, chrome-orange and a little Turkey red or mortuum caput and the parties are spotted over; then, with the addition of a little black by which means a grayer tint is obtained, the whole is spotted again and afterwards the darkest spots are laid on with black alone. See Engr. XXXVI and the explanation.

This spotting should only be done across the marble-grain and the parties sketched; across the smaller parties it is done with the corner of the brush; they represent the little pieces broken off from the larger lumps that have to be made yet. It is plain, that with every piece of lumpy marble the little lumps should have the same colours as the big ones.

The lumps are sketched with the marble-glazing-brush, filled with the colours mentioned; the lighter ones with the addition of a little white; see Engr. XXXV. (Of not mixing the colours, before taking them up in the brush, we have spoken already in Part. II and seq.) Next the little flat French-brush is taken, to fill up the smaller pieces, and then, with the sable-brush, the veiny parts are laid on across and between the lumps, especially between the lumps, see Engr. XXIII No. 8.

As soon as this is well dried up, the parties between the lumps are glazed with the flat French brush, and the glazing brush, filled with black, ultramarine blue, varied with ochre, chrome-orange, Turkey red or mortuum caput, is moved along the lumps; next across the lumps, with the colours required, especially along the dark veins of the lumps to give them more depth and force. Then the spotting-brush is taken and filled with a diluted white mixture; with this little transparent veins are laid across several lumps (see Engr. XXIII No. 1;) next with a thicker white and a little chrome-orange, pieces are spotted between the lumps, and then the lumps are finished off with the sable-brush and the marble-glazing-brush, filled with white and the other colours mentioned before. Some of them should be marked with sharp touches.

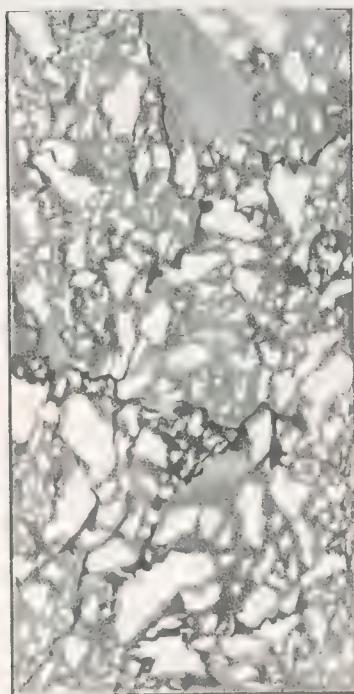
As soon as this is done, the dark colour for the veins is put into the sable-brush, to touch up the dark veins and make some of the lumps a little sharper. With white and a little chrome-orange the small white lumps and veins are laid on, touched up with pure white and the whole gently brushed over. At last the spotting brush half dry and filled with a very much diluted white is used to spot some of the lumps, etc.

We now think we have treated, according to the plan mentioned in the prospectus, those different kinds of wood and marble, which give sufficient information for all possible cases.

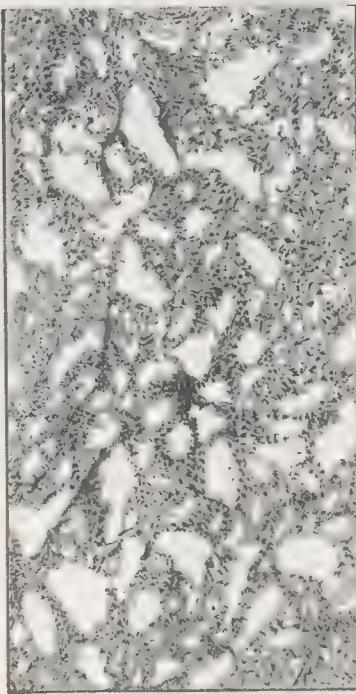
We have shown how the grains of the wood are sketched, according to the species, with either the flat-brush or the stiff-brush, see Part. III, Eng. VII, and regulated according to colour and character.

How the glazing of wood is submitted to rules, we have shown in Part. III and seq.; the colours and character have only to be imitated in the way, we have described in our work.

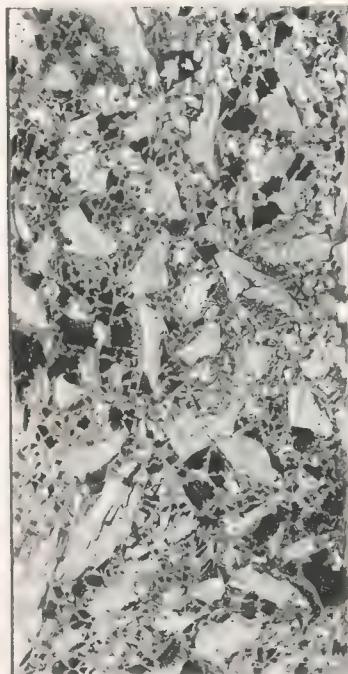
Such is also the case with marble. The characters of St. Remy, Brèche violente, white marble, Vert de Mer and Waulsort agree so much with those of other sorts, that no difficulties will be encountered by those, who are able to paint these kinds.



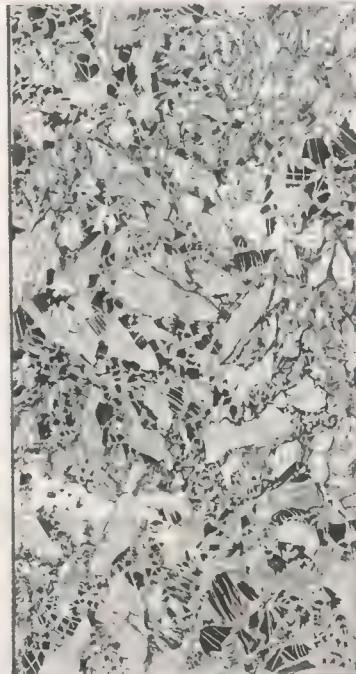
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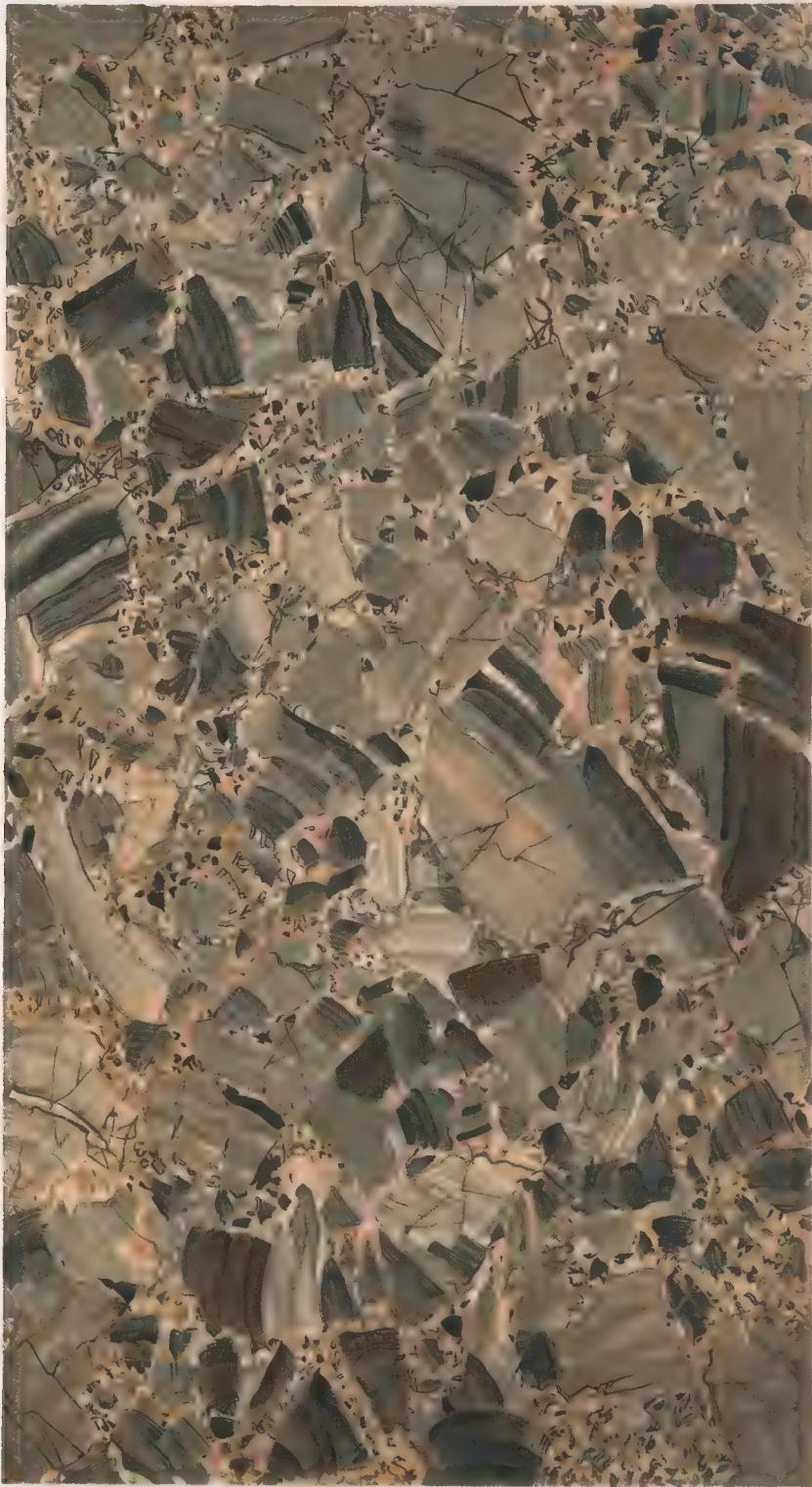


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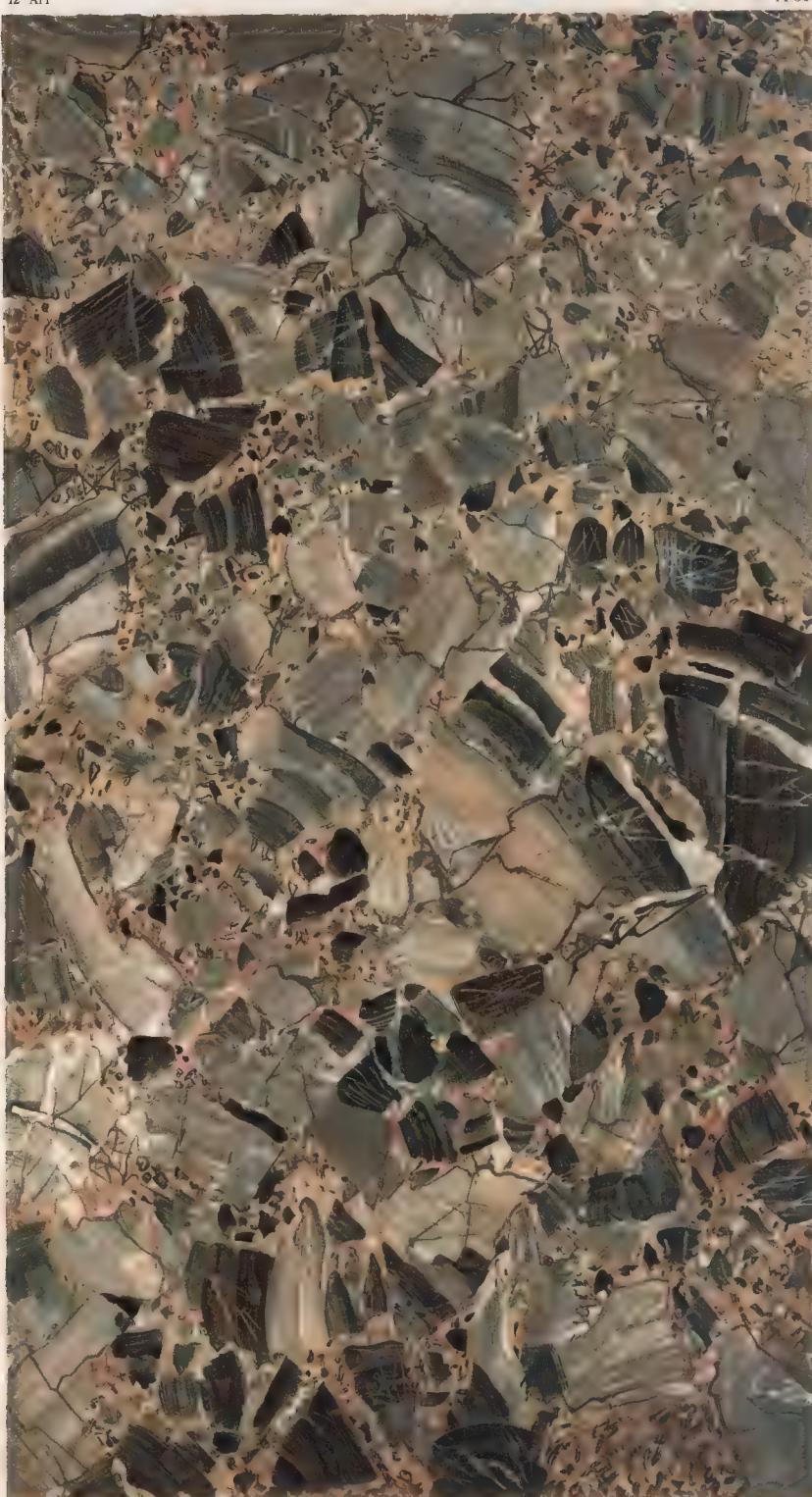


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APPENDIX.

ABOUT PAINTING IN GENERAL.

FND.

Ceilings or walls. Let us first suppose that we have to deal with old work, which wants much repairing.

A ceiling or wall, covered with a thick layer of whitewash, should be treated with care; if the expense may be made, it is desirable to take off the layer of whitewash; if it is not the case, the loose parts at least should be taken off. In some places where the whitewash is loose, this may be seen from the bladdery condition and by knocking, it may be heard. The surface is smoothed with pumice-stone; by this operation one can easily perceive the loose places and remove them accordingly.

To clean ornamental whitewashed work is very difficult and should be done by a skilful hand. The painter who does it, must be very careful and rub off the whitewash with pumice-stone. As soon as this is done, all the rents and seams are removed, even the little ones which are scarcely visible. If pieces of the ornament are broken off, they must be replaced; if it is of much importance an adept should be employed, in other cases a piece of clay is taken, pressed upon an ornament of the same shape, poured full of plaster, and this form is afterwards scraped off with a knife. Then the old existing pieces and the new made one are cut off to the dimension required, the ends are made somewhat irregular; some plaster is mixed with water so as to make it almost fluent; the two objects, that have to be joined, are well wetted and the new-made piece fastened with the prepared plaster. An hour afterwards, when the plaster is good it may be finished off with a knife and rubbed with oil the next day. This oil consists of $\frac{1}{2}$ of oil and $\frac{1}{2}$ of turpentine; the seams that have to be filled up, should be well brushed.

A new ceiling is first brushed over with $\frac{1}{2}$ of oil and $\frac{1}{2}$ of turpentine, (the reason, why a greater quantity of turpentine is used is this: there are spots that do not suck in the oil and therefore would remain glittering, and so do more harm than profit to the next coats of paint.) This being dry, common glue is melted in water so that it becomes rather thick, then chalk and well boiled oil are also made to a thick mixture. When the glue is still warm, an equal quantity of both mixtures is taken and when well mixed, the seams are filled with it, as deep as possible. This mixture is strong and does not shrink or burst. Neither putty nor plaster answers the same purpose as well. The first contains too much oil, does not harden quickly enough and would afterwards become visible through the paint; the plaster would shrink so much as to cause little rents everywhere. We have filled holes of even ten inches with this mixture and they never left any traces. Afterwards the whole surface is smoothed with putty and afterwards made equal. When the ceiling is well primed with white-lead paint, it is covered with a zinc-paint.

For the last coats the zinc-white is made as thick as possible with poppy-oil, and diluted with turpentine and a little siccative. It is left to dry for two, three or four days, then zinc-white mixed with $\frac{1}{2}$ of poppy-oil and $\frac{1}{2}$ of turpentine is taken and diluted with turpentine and a little siccative. By adding two dekagrams of white wax, dissolved in turpentine, to every pound of paint, the paint loses its brightness. The paints are made as thick as possible. When necessary the marks of the brush can be removed with the flat brushes; it is also advisable, to employ two or three men at the time. When working with such dull paints, the painter should first try, how dull they get, which depends upon the exposure to the light or whether they are exposed to smoke. In this case 5 dekagrams of stand-oil to 1 pound of the paint mentioned is recommendable. It is also necessary, whenever sharp colours are used, to make them the same in the first and second coat of poppy-paint, and not to make those paints too thick, or use soft and long-haired brushes.

In this way a strong and dull paint is obtained, which may

afterwards be cleaned with cold soapsuds and washed with water, sponge and wash-leather.

If walls or ceilings have to be ornamented, the divisions are first made on paper; if the work is a large one it is better to prepare the models beforehand. As it is not our intention to speak of this ornamental drawing, we will only give references and refer these, who wish to learn that art, to the work of H. GRÜZ, peintre décorateur à Paris entitled: *Motifs de peinture d'native pour appartements modernes*. Paris CH. CLAESSEN, éditeur and to the German work: *Deutsches Maler Journal: Organ des Deutschen Maler Bundes*. Herausgegeben von Prof. A. GNATH, Director der Kunstgewerbeschule in Nürnberg, und L. LESKE, Maler in Stuttgart. Verlag von W. SPEMANN in Stuttgart etc.

As every body knows, ornaments for this purpose are to be got, but they are not always useful, and new and fitter ones have to be made. To do this easily and accurately, the size of the ornament is divided on the paper by circles and lines; about a quarter of it is drawn and counterdrawn, by which means the corners and middle pieces are made equal. This is done with all patterns that recur again and again.

This kind of paper for cutting out ornaments is from 1 to 100 yards long and a yard and a half broad and thus has the dimension required for any work. It is rubbed with oil and a little turpentine and wax; as soon as it is dry, the prepared model is laid over it and the figures are cut out on a piece of glass. As soon as this is ready, the ornaments are fastened to the ceiling and painted over with the colours required, by which means a ceiling may be quickly ornamented. The jointures, left in the model to keep it together, are filled up afterwards. If a great many ornaments of the same kind have to be painted a second model is prepared, which leaves those jointures open and this is painted over them. When ornaments are required with light and dark colours, the model is painted on another piece of paper, the light colours are laid on and cut out separately; this is also done with the dark colours and thus one is able to paint with three models in three different colours. It is better, of course, to ornament the ceiling with the hand, but the process mentioned requires a few minutes only, and the artist wants hours and days sometimes.

For ornaments with thin lines, it is preferable to work with the brush. Models are made on a piece of paper, pricked through and blacked when fastened against the ceiling, and then they are painted over on the ceiling.

This paint should always be dull and glittering places should not be found. They may be removed when well dried, by rubbing them with turpentine and a little diluted white wax.

For gilding inoxum is used. To be sure that it will stick to the wet priming, a drop of Venetian turpentine should be mixed with the paint. It is advisable, when gilding ornaments, to rub them first with the white of an egg diluted with $\frac{1}{2}$ of water.

Straight lines may be drawn with a flat French brush; for gilding a small brush is used.

In Germany Belgium, France, in short, in those countries which are dry, many things are painted in water-colours.

This work is cheaper and keeps its colour well and answers just as well, not being exposed to rubbing or dirt.

Common work in water-colours is too well known, to require a circumstantial description; the glue is melted and made to such a thickness, that it is fluent when cold. By adding some strong gum, mixed with water, to it, it is made stronger. Marbling with this paint is done in the same way as with oil-paint, with this difference, however, that longer brushes and a sponge, instead of the spotting brush, are used, as the latter cannot stand the water. The easiest way is to prepare the paint altogether

in water and to use a strong gum-water, where turpentine is used for oil-paint. These paints are also fit for glazing, the colours are even stronger and do not change so much in drying. Moreover it is easier to work with, as the colours keep more strength, in proportion to their thinness. Every coat should be dry before a new one is laid on.

Flower-painting etc. in watercolours is best done with the white of eggs, vinegar, and a little oil, or honey.

Gilding of watercolours has to be done with the paint mentioned before, with the white of eggs, white soap and honey, glue, honey and wax, gambooge, or gum and honey.

Painting of transparent decorations is also generally known, especially to those, who make their study of it; and yet it is done in several ways.

Much may be said pro and con the glueing or starching or varnishing of the linen before painting; the diluting of the varnish when it is painted on, is a disagreeable thing and often takes place. When exposed to the air or to the sun, it is covered with oil- or wax-colour (we speak here of decorations for special occasions.) It is easier to put the linen in a frame or to hang it from the ceiling and fix it at the bottom with a piece of wood. As soon as it is stretched, the objects are sketched with charcoal or a pencil. (A surer way is to draw the model on a piece of paper and to dust it afterwards.) The transparent colours are prepared with a little glue or gum-water. The linen is kept wet with a sponge from behind, if it is too wet, one should wait till it has dried up a little, (when the linen is too dry the paint cannot be spread enough, and if too wet the paint flows away); next the wished for figures are painted and one will perceive that in this way it is as easy as possible. To place the darker colours one must wait a little to let the linen dry somewhat, as the paint penetrates better. When it is finished so far, the back is starched and when dry the front is varnished. If there are particularly glittering objects, the linen should be turned to the light and those objects varnished with a little brush; they are the sun, links, metals and eyes, and the varnish creates an effect not to be obtained in any other way.

To paint flags, the one side, as far as it has to be painted, is covered with white wax, very much diluted in turpentine; over this one should paint with a wax-paint, i. e. paint rubbed thick in oil and diluted with turpentine, that is mixed with wax and a siccative. This paint does not burst, it bends and when dry, the white wax and turpentine, wherever it has flown, is not visible.

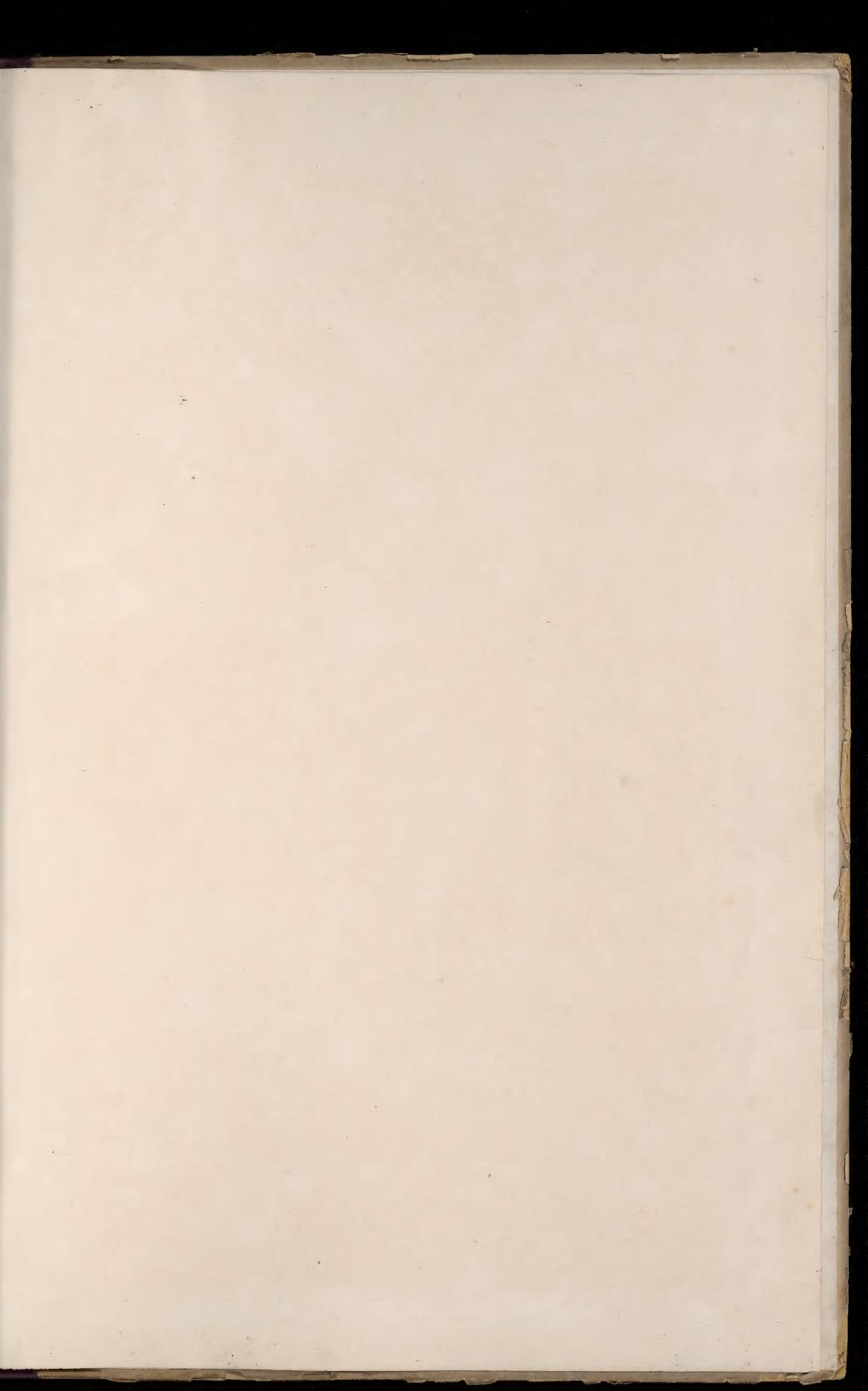
Silk flags, less exposed to the air and to folding and which are seen from near, are first covered with isinglass before they are painted.

Painting blackboards. Rub powder of pumice-stone as fine

as possible in turpentine, take equal quantities of pumice-stone, mineral white and black priming for carriages (this is a sharp black colour, almost as black as that used for carriages, which always remains dull, even when mixed with oil) add to this flathing that dries quickly, with turpentine, try on a piece of glass whether it is dull and like slate; proportions do not matter, as one varnish is thicker than the other. When the board is well primed and made smooth, this paint is put on with a soft brush. Three or four consecutive layers are required but the last one should be well dried before the new one is laid on. When this is done, it is polished off with a piece of cloth and powder of pumice-stone and one can write upon it with a slate-pencil or chalk, which may be rubbed off with water.

The polishing of varnishes etc. For tin work and all things that may be heated in the furnace, this is simpler than for doors, etc. as soon as the former are polished and the surface smoothed, the polishing is done more quickly than the varnish is prepared in the furnace; for carriages and doors much more labour is required. Care must be taken to use a varnish that dries up very hard, else it will never become shining; every coat of varnish has to be polished till the surface is entirely smooth, the last coat of varnish should be as pure as possible and the object not be exposed to dust, when left to dry. When it has become hard, polishing powder is taken mixed with water, this is left till all the heavy and uneven particles are sunk to the bottom. Next a piece of cloth is taken and the whole polished off; one should be careful not to cause any streaks by pressing too much. When this is done, tripoly is taken, rubbed fine, and mixed with olive oil, which is sifted through a piece of fine gauze so that no hard substances remain; with a soft piece of cloth the whole is then gently polished. With fine flour it is then dusted and the fatty particles taken off with a piece of soft silk, but again care should be taken not to press too hard, or to make any folds in the silk, as this would create streaks; when this is well done, a fine glitter is obtained. To enhance this, trotters or marrowbones are burned in the fire, till they are as white as snow. They are rubbed as fine as possible, mixed with water and with this mixture the whole polished over again with the tips of the fingers. One should polish so long that the powder can be removed with the fingers almost without powder and a little moisture; as long as this cannot be done, something fatty is still present and the object has to be washed with pure water and then the process is repeated. In this way a splendid glitter will be made, which will be as pure as possible.

We now think that we have filled up the open space in a satisfactory way, especially to those, who are uninitiated. We end with the wish that our efforts may have been of some use, to bring the art of painting to a higher perfection.



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